CARIBBEAN REGIONAL RESPONSE TEAM

United States Coast Guard

Environmental Protection Agency

Department of Agriculture

Department of Commerce

Department of Defense

Department of Energy

Department of Health and Human Services

Department of the Interior

Department of Justice

Department of Labor

Department of State

Department of Transportation

Department of the Treasury

Federal Emergency Management Agency

General Services Administration

Nuclear Regulatory Commission

Commonwealth of Puerto Rico

Territory of the Virgin Islands

April 26 2006

Mr. Jon Hemming
U.S. Fish & Wildlife Service
1601 Balboa Ave
Panama City, FL 32405

Dear Mr. Hemming:

In accordance with the requirements of the Endangered Species Act and 50 CFR 402.12, I am enclosing for your review and concurrence our "Biological Evaluation for Federally Endangered, Threatened, and Candidate Species for Region 4 and the Caribbean Regional Response Teams on Limited Pre-authorization and Use Policy for Chemical Countermeasures: Solidifiers."

I have also enclosed a copy of the "Limited Pre-authorization and Use Policy for Chemical Countermeasures" for the Caribbean Regional Response Team area of responsibility. This document is similar in all respects to the policy for the Region 4 Regional Response Team with the exception of the signatory states/territories.

Our assessment indicates that the endangered, threatened, and candidate species are not likely to be adversely affected by this action. The use of solidifiers offers strong potential for net environmental benefit during an oil spill by allowing for increased protection of biological resources and habitat, as outlined in the document, and provides for a method to remove oil products from the environment which are more difficult or elusive by other response methods. The opportunity to provide a more rapid, and effective response to spills of small volume, particularly light end oil products, will subject fewer resources to potential impact.

Thank you for your efforts in this review. With your concurrence, a formal consultation should not be necessary. If you have any questions or desire further information, please contact me at (305) 415-6871.

Sincerely,

Patrick T. Keane

Patrick T. Keane
Region 4 and Caribbean Regional Response Teams
Alternate Co-Chair and Coordinator
Seventh Coast Guard District

Encl: (1) Biological Evaluation
(2) Limited Pre-authorization and Use Policy for Chemical Countermeasures: Solidifiers. (CRRT)

Chief, Marine Safety Division
Seventh Coast Guard District (m)
909 SE First Ave, Suite 808
Miami, FL 33131-3050
305-536-5651 / FAX 305-536-5091

Chief, Response and Prevention Branch
U.S. Environmental Protection Agency II
2890 Woodbridge Ave (MS 211)
Edison, NJ 08837-3679
732-321-6656 / FAX 732-321-4425

IN REPLY REFER TO:

United States Department of the Interior

FILE

FISH AND WILDLIFE SERVICE
Field Office
1601 Balboa Avenue
Panama City, FL 32405-3721

Tel: (850) 769-0552
Fax: (850) 763-2177

May 24, 2006

Memorandum

To: Assistant Regional Director, USFWS, Ecological Services, Atlanta, GA
Attn: Joe Johnston, Section 7 Coordinator, Endangered Species

From: Project Leader, Panama City FO, Ecological Services, FL

Subject: Concurrence with Findings of "Biological Evaluation of Federally Endangered, Threatened, and Candidate Species for Region 4 and the Caribbean Regional Response Teams on Limited Pre-authorization and Use Policy for Chemical Countermeasures: Solidifiers

As requested by Region 4 and Caribbean Spill Response Teams, biologists in each field office of the Southeast Region have reviewed the document "Biological Evaluation of Federally Endangered, Threatened, and Candidate Species for Region 4 and the Caribbean Regional Response Teams on Limited Pre-authorization and Use Policy for Chemical Countermeasures: Solidifiers." We collectively concur with the determination that endangered, threatened, and candidate species are not likely to be adversely affected by this action. Please complete the consultation by signing where indicated and returning to the Regional Response Team. We would also appreciate a signed copy for our records and distribution to the other field offices.

If you have any questions or would like to discuss the consultation, please contact Dr. Jon Hemming at extension 238.

Karl Carmody

Attachments:
Region 4 and Caribbean Response Teams Review Request
Biological Evaluation
Limited Pre-authorization and Use Policy for Chemical Countermeasures

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26 April 2006

SOUTHEAST REGION
SECTION 7
BIOLOGICAL EVALUATION

[for Federally endangered, threatened, and candidate species]

Originating Person: Patrick Keane, United States Coast Guard Regional Response Team Alternate Co-chair and Coordinator, Region 4 and Caribbean Spill Response Teams.

Regional Response Team Point of Contact: Gregory Hogue, Chair of RRT4 and CRRT Science and Technology Committees
Telephone Number: (404)331-4524 **E-Mail:** gregory_hogue@ios.doi.gov
Date: 05 April, 2006

PROJECT NAME: Pre-Authorization Policy for the Use of Solidifiers (a Chemical Countermeasure)

I. **Program:** Spill Response and Technology in Support of the National Oil and Hazardous Substances Contingency Plan (NCP)

II. **State/Agency:** Region IV and Caribbean Regional Response Teams

III. **Station Name:** Northeastern Gulf of Mexico

IV. **Description of Proposed Action:**

The Regional 4 and Caribbean Response Teams (RRT4 and CRRT) have developed this limited pre-approval and use policy to allow for the use of solidifiers as listed on the U.S. Environmental Protection Agency (USEPA) Product Schedule for mitigation of oil spills. Solidifiers are considered an alternative to sorbents or mechanical recovery to recover small amounts of oil or thin sheens from the water surface. They also have been shown to be useful by creating solid barriers that can limit spreading, thereby enhancing containment, collection, and recovery.

Solidification of oil is an oil spill countermeasure that was evaluated by the RRT4 and the CRRT as a candidate for developing preauthorization for use. Due to the potential for solidifiers to: 1) add to the increased effectiveness of response in certain situations; 2) the fact that currently listed solidifiers are not a significant concern from a toxicological point of view; and 3) they don't sink once reacted with oil, the RRTs agreed that preauthorization for use of solidifiers under certain conditions was desirable.

Preauthorization is necessary because the product must be on hand at the spill site and applied immediately to be effective for most spills. This preauthorization agreement is for the use of

ENCL (1)

solidifiers in all applications. However, the use of solidifiers contained in booms, socks, pillows or other similar manner may be considered for use in the same manner as sorbents provided all materials are fully recovered and disposed of properly.

Application ratios of loose powder form of solidifiers ranging from 1:1 to 1:10, they are best used to treat relatively small volumes of spilled oil. Using solidifiers for small spills has the following benefits:

- The treated oil becomes immobilized and will not spread further on the surface or into the ground.
- Solidifiers can be added to the perimeter of the oil, forming a solidified barrier to prevent further spreading, rather than treating the entire spill volume.
- The solidified oil can be removed with readily available hand tools, rather than requiring liquid storage and pumping systems.
- Solidifiers are effective on thin sheens whereas standard sorbent materials commonly do not pick up sheens.
- May in some cases be more effective on slow continuous small releases than sorbents.

Under the NCP (Section 300.910), Regional Contingency Plans and Area Contingency Plans may include preauthorization plans that address the specific contexts in which specific oil spill control products should and should not be used. Factors for consideration in the preauthorization plan include:

- Potential sources and types of oil spilled
- Sensitive resources at risk from spilled oil
- Available equipment and adequately trained operators
- Amount of oil to be treated
- The available means to monitor product application, effectiveness, and recovery

Purpose

This policy implements Subpart J of the National Oil and Hazardous Substances Contingency Plan (NCP) and provides for the limited use of solidifiers as listed on the EPA product schedule on oil discharges within the Region 4 and CRRT area of responsibility. This pre-authorization applies for use on ocean and coastal waters, inland waters, and on land when the use is in accordance with all protocols and conditions of this policy. This authorization does not apply to use in aquifers and other areas where recovery would be limited, difficult, or unlikely.

The members of the RRT4 and the CRRT agree that solidifiers may offer enhanced response capability under certain conditions that may lead to prevention of serious environmental damage, and reduced threat to the public health or welfare. This policy establishes criteria under which solidifiers may be applied in the environment within the two regions.

Authority

Subpart J of the National Oil and Hazardous Substances Contingency Plan (NCP) provides that the pertinent Regional Response Team (RRT) representatives including the EPA, DOC, DOI, and the affected State(s) may pre-authorize the use of chemical countermeasures for oil spill response.
RRT representatives from the States of North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, the Commonwealth of Kentucky, the Commonwealth of Puerto Rico, and the territory of the U.S. Virgin Islands have been delegated authority by their respective agencies of state governments to represent natural resource concerns and to serve as consultants to the Federal On Scene Coordinator (FOSC) on these matters.

Scope

The USCG, EPA, DOI, DOC and the states, commonwealths and territories named above have adopted the use of solidifiers as an approved tool to respond to spilled or discharged oil on the waters or lands within the jurisdiction of the RRTs. This policy includes protocols under which solidifier use must be conducted. Use outside the limitations of these protocols shall be on a case by case basis as evaluated and authorized by an incident specific RRT.

Application of solidifiers to remediate oil spills occurring in the RRT regions will be conducted in accordance with this policy and, in addition where applicable, in accordance with Letters of Agreement established between the USCG, EPA, DOI, DOC and the affected state(s), commonwealths and territories. The pre-authorization to use solidifiers as provided by this policy is in effect only as dictated by all protocols established in Section III. This pre-authorization applies only to the spill response countermeasure known as solidifiers as listed on the current EPA product schedule. The RRTs may review any listed solidifier product at any time and may exclude them from pre-authorized use dependant on environmental, health or safety concerns.

Limited Pre-Authorization of Solidifier Use-General Considerations and Protocols

Potential Sources and Types of Oil

Specific solidifier formulations have been shown to be effective on all types of oil. Mixing the product with the oil is more difficult with viscous oils, therefore, solidifiers are generally considered to be more effective with lighter oil types. The best solidifier formulation(s) should be selected for the types of oil to be treated and spill conditions. Pre-testing of solidifier brands with specific oil types may be desired in order to better select the best candidate product.

Examples of the potential sources of spills where solidifier use is considered to have a potentially

beneficial and routine niche are listed below:

1. Spills to Water in Marinas, Harbors, Ports, and other Industrial Areas where:

    - Small spills occur frequently
    - Spills are mostly light refined products that quickly spread into thin sheens that are difficult to contain and recover
    - Water currents are slow and there are structures that provide some in-place containment
    - Products could be stored at likely sources of spills (e.g., fueling docks)
    - Facility personnel can be trained in the proper use, recovery, and disposal of the products and treated oil

2. Spills on Land where:

    - Spilled oil could flow off-site into ditches and creeks
    - Oil has the potential to soak in to the ground, contaminating soils and groundwater
    - Facility personnel can be trained in the proper use, recovery, and disposal of the products and treated oil
    - Examples include fueling and oil loading stations, rail yards, and oil storage facilities

Sensitive Resources

Currently listed solidifiers in general have very low if any acute aquatic toxicity, primarily because they are insoluble in water. However, other concerns have been raised, including:

- Toxicity associated with ingestion of unreacted product;
- Ingestion and fouling hazard of treated oil or partially treated oil that is not contained or escapes containment;
- How treated oil would interact with sensitive habitats such as wetlands and; and
- Whether treated oil will be more persistent in the environment and tend to weather and sink over long periods of time.

Due to the fact that solidifiers identified for use under this preauthorization are not toxic, don't sink, are essentially inert to organisms, and render the toxic components of reacted petroleum bio-unavailable to organisms that may ingest them, no special resource restrictions for their use have been identified at this time. As long as the products are applied as directed and fully recovered from the environment, no significant adverse environmental impacts from the use of solidifiers are expected. Their use as allowed under this policy will create no more risk than the use of commonly used sorbent materials which are not regulated. Solidifiers that are manufactured in high quality booms, socks, pillows, or other effective containment devices that do not allow for the possibility of loose material to enter the environment may be considered for use in the same manner as sorbents provided all materials are fully recovered and disposed of

properly. Application of solidifiers in loose form will be more restricted as discussed below.

Standard good oil-response practices are required, such as proper application of the solidifier, minimization of foot traffic and trampling of oil into the sediments/soils or damaging vegetation, avoiding application of product directly on to wildlife, and recovery all product and treated oil.

Any use restrictions identified through Section 7 consultations with the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS), as required under the Endangered Species Act as well as any requirements noted under consultation for Essential Fish Habitat (EFH) with NMFS must be complied with (see Section IV; Appendix 2). All stipulations, controls, or limitations identified by the signatory States or Federal Natural Resource Trustees must be complied with as well (see Section IV; appendix 1), Additionally, the State Historic Preservation Officer should also be notified/consulted on the use of solidifiers, as required under the National Historic Preservation Act, if use of a solidifier is in an area where there is an identified potential for impacts to cultural, archeological, or historic resources. The local FWS and NMFS offices should also be notified/consulted on the use of solidifiers when there is a potential for impacts to threatened or endangered species.

Application Methods and Adequately Trained Staff

Concerns with the application of solidifiers in loose powder form include excess release of product to the environment due to poor application techniques and over application that can lead to increased volumes of waste material. The pre-authorization includes application and recovery requirements with the intent of providing guidelines for the proper use of solidifiers in loose form without being overly restricted. It is important that staff be adequately trained in the proper use of solidifiers.

Preauthorization Conditions

1. Product Information – This preauthorization applies only those products that have been listed on the NCP Product Schedule (effective 08/05). The purpose of this condition is to make sure that adequate information on product composition and toxicity are available to buyers. The Product Schedule must be reviewed periodically to ensure that no new solidifiers have been added that would cause concern if used in the environment and hence would not be authorized for use under this pre-authorization policy.

2. Amount of Oil to be Treated – Solidifiers in loose form may be used on any oil type under 500 gallons (this is the treatment volume, not the total spill volume).
   No restriction is noted for solidifier used in contained form (booms, pillows, socks) as long as complete recovery is accomplished.

3. Amount of Product Approved for Application – No more than 1,000 pounds of loose solidifier product can be applied in response to a single treatment event under this

preauthorization. This limit was based on an application ratio of 1:4 and the treatment volume limit of 500 gallons, as supported by manufacture's application rate guidance. Application of additional amounts requires a request to the RRT.

4. Application/Recovery Requirements –

   a. On Water (includes rivers, streams, creeks, lakes, ponds, wetlands, open ocean, marine and coastal waters, etc.). In all cases, the application of loose solidifier material must be continuously monitored to ensure material is completely contained and recovered. Recovery must be conducted as soon as the product is no longer effectively removing oil.
      i. Apply loose product only directly onto contained oil. No loose product will be applied to flowing waterbodies unless the oil is physically contained, such by hard boom or inside a lock or other effective containment structure. The product will be applied in a manner that prevents loss from wind drift, overspray, and spillage.
      If environmental conditions such as wind, currents, weather, prohibit effective containment and recovery of the applied solidifier and treated oil, then pre-authorization does not apply.
      ii. Product contained in booms, pillows, pads, etc. can be deployed in flowing waters as long as they are monitored and replaced prior to failure of containment systems.
      iii. The loose product will be applied only by responders that have been trained in the proper application of the product. The intent is to prevent misuse and over application.
      iv. No loose product will be applied directly onto wildlife (e.g., birds, mammals, reptiles) or in or in sensitive wetland or coastal/marine habitat where resources could be adversely affected if complete recovery is not accomplished or in areas that may affect known cultural, archaeological, or historic properties. Pre-authorization for use of loose solidifier material does not apply for specially managed waters or lands including designated marine sanctuaries, preserves, or national parks without consultation with the proper resource and property manager.
      v. All product and treated oil will be recovered.
   b. On Land
      i. Only apply loose product directly onto oil or to create a barrier ahead of flowing oil. No loose product will be applied to drainages in an attempt to wash it towards oil downstream.
      ii. Solidifier booms and pillows can be placed in drainages to intercept oil. However, all materials will be monitored and replaced to prevent failure of containment systems.
   c. Waste Disposal
      i. All recovered wastes will be disposed of properly.

5. Monitoring Requirements – During operational use of the loose form solidifier product, monitor the effectiveness and effects of the application, including:
    a. The product:oil ratio needed to solidify the oil. When the amount needed to solidify the oil exceeds the recommended application rate by a factor of 2, determine whether further treatment is warranted.
    b. The properties of the treated oil (firm mass, sticky, non-sticky, etc.).
    c. The efficiency of treated oil recovery.
    d. The degree of damage to substrate and vegetation during application and recovery.

6. Reporting Requirements – As part of the response documentation, the responsible party or responding organization must maintain records of the following information:
    a. Amount of loose solidifier used
    b. Type and amount of oil treated
    c. Weight and/or volume of treated oil recovered
    d. Evaluation of effectiveness of the application

Any use that results in problems, including: non effectiveness, inability to contain and recover solidifier and treated oil, or any observed impacts to wildlife, aquatic resources, or sensitive habitat or known cultural, archaeological, or historic properties must be reported as soon as feasible to the CRRT through the National Response Center (800) 424-8802.

If additional or updated information becomes available on application methods, toxicity, and/or sensitive species and their habitat, then the conditions of solidifier use and application will require re-initiation of consultation for further biological evaluation.

V. Pertinent Species and Habitat:

A. Species/habitat occurrence: All of U.S. Fish and Wildlife Region 4 and Caribbean Region.

B. Complete the following table:

Species Name	Listing Status
Mammals	
Deer, key	
Odocoileus virginianus clavium	E
Vole, Florida salt marsh	
Microtus pennsylvanicus dukecampbelli	E
Manatee, West Indian	
Trichechus manatus	E
Panther, Florida	
Puma (=Felis) concolor coryi	E
Wolf, red	E

(except where XN)	
Canis rufus	
Rice rat	
(lower FL Keys)	
Oryzomys palustris natator	E
Mouse, Key Largo cotton	
Peromyscus gossypinus allapaticola	E
Woodrat, Key Largo	
Neotoma floridana smalli	E
Mouse, Choctawhatchee beach	
Peromyscus polionotus allophrys	E
Mouse, Perdido Key beach	
Peromyscus polionotus trissyllepsis	E
Bear, Louisiana black	
Ursus americanus luteolus	T
Mouse, Alabama beach	
Peromyscus polionotus ammobates	E
Squirrel, Carolina northern flying	
Glaucomys sabrinus coloratus	E
Rabbit, Lower Keys marsh	
Sylvilagus palustris hefneri	E
Mouse, Anastasia Island beach	
Peromyscus polionotus phasma	E
Mouse, southeastern beach	
Peromyscus polionotus niveiventris	T
Mouse, St. Andrew beach	
Peromyscus polionotus peninsularis	E
Birds	
Sparrow, Cape Sable seaside	
Ammodramus maritimus mirabilis	E
Tern, roseate	
(Western Hemisphere except NE U.S.)	
Sterna dougallii dougallii	T
Kite, Everglade snail	
(FL pop.)	
Rostrhamus sociabilis plumbeus	E
Parrot, Puerto Rican	
Amazona vittata	E
Warbler (=wood), Bachman's	
Vermivora bachmanii	E
Woodpecker, ivory-billed	
Campephilus principalis	E
Pigeon, Puerto Rican plain	
Columba inornata wetmorei	E
Woodpecker, red-cockaded	
Picoides borealis	E
Crane, Mississippi sandhill	
Grus canadensis pulla	E
Nightjar, Puerto Rican	
Caprimulgus noctitherus	E
Blackbird, yellow-shouldered	
Agelaius xanthomus	E
Stork, wood	E

(AL, FL, GA, SC)	
Mycteria americana	
Caracara, Audubon's crested	
(FL pop.)	
Polyborus plancus audubonii	T
Hawk, Puerto Rican broad-winged	
Buteo platypterus brunnescens	E
Sparrow, Florida grasshopper	
Ammodramus savannarum floridanus	E
Jay, Florida scrub	
Aphelocoma coerulescens	T
Hawk, Puerto Rican sharp-shinned	
Accipiter striatus venator	E
Crow, white-necked	
Corvus leucognaphalus	E
Cahow	
Pterodroma cahow	E

Reptiles

Sea turtle, green	
(except where endangered)	
Chelonia mydas	T
Anole, Culebra Island giant	
Anolis roosevelti	E
Boa, Mona	
Epicrates monensis monensis	T
Turtle, flattened musk	
(species range clarified)	
Sternotherus depressus	T
Gecko, Monito	
Sphaerodactylus micropithecus	E
Sea turtle, hawksbill	
Eretmochelys imbricata	E
Sea turtle, leatherback	
Dermochelys coriacea	E
Boa, Puerto Rican	
Epicrates inornatus	E
Sea turtle, green	
(FL, Mexico nesting pops.)	
Chelonia mydas	E
Sea turtle, loggerhead	
Caretta caretta	T
Sea turtle, olive ridley	
(Mexican nesting pop.)	
Lepidochelys olivacea	E
Lizard, St. Croix ground	
Ameiva polops	E
Iguana, Mona ground	
Cyclura cornuta stejnegeri	T
Snake, Atlantic salt marsh	
Nerodia clarkii taeniata	T
Turtle, Alabama red-belly	
Pseudemys alabamensis	E
Turtle, ringed map	T

Graptemys oculifera	
Turtle, yellow-blotched map	
Graptemys flavimaculata	T
Snake, eastern indigo	
Drymarchon corais couperi	T
Boa, Virgin Islands tree	
Epicrates monensis granti	E
Crocodile, American	
Crocodylus acutus	E
Skink, bluetail mole	
Eumeces egregius lividus	T
Skink, sand	
Neoseps reynoldsi	T
Tortoise, gopher	
(W of of Mobile/Tombigbee Rs.)	
Gopherus polyphemus	T

Amphibians

Guajon	
Eleutherodactylus cooki	T
Frog, Mississippi gopher	
(Wherever found west of Mobile and Tombigbee Rivers in AL, MS, and LA)	
Rana capito sevosa	E
Salamander, Red Hills	
Phaeognathus hubrichti	T
Coqui, golden	
Eleutherodactylus jasperi	T
Toad, Puerto Rican crested	
Peltophryne lemur	T
Salamander, flatwoods	
Ambystoma cingulatum	T

Fishes

Darter, slackwater	
Etheostoma boschungi	T
Darter, bayou	
Etheostoma rubrum	T
Sturgeon, Alabama	
Scaphirhynchus suttkusi	E
Shiner, palezone	
Notropis albizonatus	E
Darter, goldline	
Percina aurolineata	T
Darter, bluemask (=jewel)	
Etheostoma /	E
Darter, vermilion	
Etheostoma chermocki	E
Darter, Okaloosa	
Etheostoma okaloosae	E
Darter, watercress	
Etheostoma nuchale	E
Darter, snail	T

Percina tanasi	
Chub, spotfin	
(Entire)	
Erimonax monachus	T
Sculpin, pygmy	
Cottus paulus (=pygmaeus)	T
Shiner, Cape Fear	
Notropis mekistocholas	E
Silverside, Waccamaw	
Menidia extensa	T
Chub, slender	
Erimystax cahni	T
Madtom, yellowfin	
(except where XN)	
Noturus flavipinnis	T
Madtom, smoky	
(Entire)	
Noturus baileyi	E
Cavefish, Ozark	
Amblyopsis rosae	T
Darter, Cherokee	
Etheostoma scotti	T
Madtom, pygmy	
Noturus stanauli	E
Shiner, Cahaba	
Notropis cahabae	E
Sturgeon, gulf	
Acipenser oxyrinchus desotoi	T
Darter, amber	
Percina antesella	E
Logperch, Conasauga	
Percina jenkinsi	E
Dace, blackside	
Phoxinus cumberlandensis	T
Darter, boulder	
Etheostoma wapiti	E
Shiner, blue	
Cyprinella caerulea	T
Darter, duskytail	
(Entire)	
Etheostoma percnurum	E
Darter, relict	
Etheostoma chienense	E
Darter, Etowah	
Etheostoma etowahae	E
Cavefish, Alabama	
Speoplatyrhinus poulsoni	E
Clams	
Lampmussel, Alabama	
(Entire Range; Except where listed as Experimental Populations)	
Lampsilis virescens	E
Pearlymussel, littlewing	E

Pegias fabula	
Pocketbook, fat	
Potamilus capax	E
Combshell, southern	
Epioblasma penita	E
Heelsplitter, Alabama (=inflated)	
Potamilus inflatus	T
Stirrupshell	
Quadrula stapes	E
Pearlshell, Louisiana	
Margaritifera hembeli	T
Combshell, upland	
Epioblasma metastriata	E
Clubshell, ovate	
Pleurobema perovatum	E
Kidneyshell, triangular	
Ptychobranchus greenii	E
Bean, Cumberland (pearlymussel)	
(Entire Range; Except where listed as Experimental Populations)	
Villosa trabalis	E
Blossom, green (pearlymussel)	
Epioblasma torulosa gubernaculum	E
Blossom, tubercled (pearlymussel)	
(Entire Range; Except where listed as Experimental Populations)	
Epioblasma torulosa torulosa	E
Blossom, turgid (pearlymussel)	
(Entire Range; Except where listed as Experimental Populations)	
Epioblasma turgidula	E
Blossom, yellow (pearlymussel)	
(Entire Range; Except where listed as Experimental Populations)	
Epioblasma florentina florentina	E
Lilliput, pale (pearlymussel)	
Toxolasma cylindrellus	E
Monkeyface, Cumberland (pearlymussel)	
(Entire Range; Except where listed as Experimental Populations)	
Quadrula intermedia	E
Mucket, pink (pearlymussel)	
Lampsilis abrupta	E
Pearlymussel, birdwing	
(Entire Range; Except where listed as Experimental Populations)	
Conradilla caelata	E
Pearlymussel, dromedary	
(Entire Range; Except where listed as Experimental Populations)	
Dromus dromas	E
Wartyback, white (pearlymussel)	
Plethobasus cicatricosus	E
Pigtoe, finerayed	E

(Entire Range; Except where listed as Experimental Populations) *Fusconaia cuneolus*	
Pigtoe, rough *Pleurobema plenum*	E
Pigtoe, shiny (Entire Range; Except where listed as Experimental Populations) *Fusconaia cor*	E
Pimpleback, orangefoot (pearlymussel) *Plethobasus cooperianus*	E
Ring pink (mussel) *Obovaria retusa*	E
Riffleshell, tan *Epioblasma florentina walkeri (=E. walkeri)*	E
Clubshell, black *Pleurobema curtum*	E
Pigtoe, flat *Pleurobema marshalli*	E
Pigtoe, heavy *Pleurobema taitianum*	E
Spinymussel, Tar River *Elliptio steinstansana*	E
Combshell, Cumberlandian (Entire Range; Except where listed as Experimental Populations) *Epioblasma brevidens*	E
Elktoe, Appalachian *Alasmidonta raveneliana*	E
Elktoe, Cumberland *Alasmidonta atropurpurea*	E
Mucket, orangenacre *Lampsilis perovalis*	T
Mussel, oyster (Entire Range; Except where listed as Experimental Populations) *Epioblasma capsaeformis*	E
Pearlymussel, cracking (Entire Range; Except where listed as Experimental Populations) *Hemistena lata*	E
Pocketbook, speckled *Lampsilis streckeri*	E
Acornshell, southern *Epioblasma othcaloogensis*	E
Bankclimber, purple (mussel) *Elliptoideus sloatianus*	T
Fanshell *Cyprogenia stegaria*	E
Fatmucket, Arkansas *Lampsilis powelli*	T
Heelsplitter, Carolina *Lasmigona decorata*	E
Pigtoe, oval *Pleurobema pyriforme*	E

Pocketbook, finelined	
Lampsilis altilis	T
Pocketbook, shinyrayed	
Lampsilis subangulata	E
Three-ridge, fat (mussel)	
Amblema neislerii	E
Pigtoe, Cumberland	
Pleurobema gibberum	E
Clubshell, southern	
Pleurobema decisum	E
Moccasinshell, Alabama	
Medionidus acutissimus	T
Moccasinshell, Coosa	
Medionidus parvulus	E
Pigtoe, dark	
Pleurobema furvum	E
Pigtoe, southern	
Pleurobema georgianum	E
Moccasinshell, Gulf	
Medionidus penicillatus	E
Moccasinshell, Ochlockonee	
Medionidus simpsonianus	E
Slabshell, Chipola	
Elliptio chipolaensis	T

Snails

Shagreen, Magazine Mountain	
Mesodon magazinensis	T
Snail, noonday	
Mesodon clarki nantahala	T
Snail, painted snake coiled forest	
Anguispira picta	T
Marstonia, royal (snail)	
Pyrgulopsis ogmorhaphe	E
Elimia, lacy (snail)	
Elimia crenatella	T
Rocksnail, round	
Leptoxis ampla	T
Snail, Stock Island tree	
Orthalicus reses (not incl. nesodryas)	T
Riversnail, Anthony's	
(Entire Range; Except where listed as Experimental Populations)	
Athearnia anthonyi	E
Snail, armored	
Pyrgulopsis (=Marstonia) pachyta	E
Snail, tulotoma	
Tulotoma magnifica	E
Lioplax, cylindrical (snail)	
Lioplax cyclostomaformis	E
Pebblesnail, flat	
Lepyrium showalteri	E
Rocksnail, painted	
Leptoxis taeniata	T

Rocksnail, plicate	
Leptoxis plicata	E
Campeloma, slender	
Campeloma decampi	E
Insects	
Butterfly, Schaus swallowtail	
Heraclides aristodemus ponceanus	E
Butterfly, Saint Francis' satyr	
Neonympha mitchellii francisci	E
Arachnids	
Spider, spruce-fir moss	
Microhexura montivaga	E
Crustaceans	
Crayfish, Nashville	
Orconectes shoupi	E
Shrimp, Alabama cave	
Palaemonias alabamae	E
Shrimp, Kentucky cave	
Palaemonias ganteri	E
Shrimp, Squirrel Chimney Cave	
Palaemonetes cummingi	T
Crayfish, cave	
Cambarus zophonastes	E
Crayfish, cave	
Cambarus aculabrum	E
Flowering Plants	
Amaranthus pumilus	
Amaranth, seabeach	T
Amorpha crenulata	
Lead-plant, Crenulate	E
Amphianthus pusillus	
Amphianthus, little	T
Apios priceana	
Potato-bean, Price's	T
Arabis perstellata	
Rock-cress, Braun's	E
Arenaria cumberlandensis	
Sandwort, Cumberland	E
Aristida chaseae	
No common name	E
Aristida portoricensis	
Pelos del diablo	E
Asimina tetramera	
Pawpaw, four-petal	E
Astragalus bibullatus	
Ground-plum, Guthrie's (=Pyne's)	E
Auerodendron pauciflorum	E

No common name	
Banara vanderbiltii	
Palo de ramon	E
Baptisia arachnifera	
Rattleweed, hairy	E
Bonamia grandiflora	
Bonamia, Florida	T
Buxus vahlii	
Boxwood, Vahl's	E
Callicarpa ampla	
Capa rosa	E
Calyptranthes thomasiana	
No common name	E
Calyptronoma rivalis	
Manaca, palma de	T
Campanula robinsiae	
Bellflower, Brooksville	E
Cardamine micranthera	
Bittercress, small-anthered	E
Carex lutea	
Sedge, golden	E
Catesbaea melanocarpa	
No common name	E
Cereus eriophorus var. fragrans	
Prickly-apple, fragrant	E
Chamaecrista glandulosa var. mirabilis	
No common name	E
Chamaesyce deltoidea ssp. deltoidea	
Spurge, deltoid	E
Chamaesyce garberi	
Spurge, Garber's	T
Chionanthus pygmaeus	
Fringe-tree, pygmy	E
Chrysopsis floridana	
Aster, Florida golden	E
Clematis morefieldii	
Leather flower, Morefield's	E
Clematis socialis	
Leather flower, Alabama	E
Clitoria fragrans	
Pigeon wings	T
Conradina brevifolia	
Rosemary, short-leaved	E
Conradina etonia	
Rosemary, Etonia	E
Conradina glabra	
Rosemary, Apalachicola	E
Conradina verticillata	
Rosemary, Cumberland	T
Cordia bellonis	
No common name	E
Cornutia obovata	
Palo de nigua	E
Cranichis ricartii	
No common name	E

Crescentia portoricensis	
Higuero de sierra	E
Crotalaria avonensis	
Harebells, Avon Park	E
Cucurbita okeechobeensis ssp. okeechobeensis	
Gourd, Okeechobee	E
Dalea foliosa	
Prairie-clover, leafy	E
Daphnopsis hellerana	
No common name	E
Deeringothamnus pulchellus	
Pawpaw, beautiful	E
Deeringothamnus rugelii	
Pawpaw, Rugel's	E
Dicerandra christmanii	
Mint, Garrett's	E
Dicerandra cornutissima	
Mint, longspurred	E
Dicerandra frutescens	
Mint, scrub	E
Dicerandra immaculata	
Mint, Lakela's	E
Echinacea laevigata	
Coneflower, smooth	E
Echinacea tennesseensis	
Coneflower, Tennessee purple	E
Eriogonum longifolium var. gnaphalifolium	
Buckwheat, scrub	T
Eryngium cuneifolium	
Snakeroot	E
Eugenia haematocarpa	
Uvillo	E
Eugenia woodburyana	
No common name	E
Euphorbia telephioides	
Spurge, telephus	T
Galactia smallii	
Milkpea, Small's	E
Geocarpon minimum	
No common name	T
Gesneria pauciflora	
No common name	T
Geum radiatum	
Avens, spreading	E
Goetzea elegans	
Goetzea, beautiful	E
Harperocallis flava	
Beauty, Harper's	E
Harrisia portoricensis	
Chumbo, Higo	T
Hedyotis purpurea var. montana	
Bluet, Roan Mountain	E
Helianthus schweinitzii	
Sunflower, Schweinitz's	E
Hexastylis naniflora	T

Heartleaf, dwarf-flowered	
Hudsonia montana	
Heather, mountain golden	T
Hypericum cumulicola	
Hypericum, highlands scrub	E
Ilex cookii	
Holly, Cook's	E
Ilex sintenisii	
No common name	E
Jacquemontia reclinata	
Jacquemontia, beach	E
Juglans jamaicensis	
Walnut (=Nogal), West Indian	E
Justicia cooleyi	
Water-willow, Cooley's	E
Lepanthes eltoroensis	
No common name	E
Leptocereus grantianus	
No common name	E
Lesquerella lyrata	
Bladderpod, lyrate	T
Lesquerella perforata	
Bladderpod, Spring Creek	E
Liatris helleri	
Blazingstar, Heller's	T
Liatris ohlingerae	
Blazingstar, scrub	E
Lindera melissifolia	
Pondberry	E
Lupinus aridorum	
Lupine, scrub	E
Lyonia truncata var. proctorii	
No common name	E
Lysimachia asperulaefolia	
Loosestrife, rough-leaved	E
Macbridea alba	
Birds-in-a-nest, white	T
Marshallia mohrii	
Button, Mohr's Barbara	T
Mitracarpus maxwelliae	
No common name	E
Mitracarpus polycladus	
No common name	E
Myrcia paganii	
No common name	E
Nolina brittoniana	
Beargrass, Britton's	E
Ottoschulzia rhodoxylon	
Palo de rosa	E
Oxypolis canbyi	
Dropwort, Canby's	E
Paronychia chartacea	
Whitlow-wort, papery	T
Peperomia wheeleri	
Peperomia, Wheeler's	E

Pilosocereus robinii	
Cactus, Key tree	E
Pinguicula ionantha	
Butterwort, Godfrey's	T
Pityopsis ruthii	
Aster, Ruth's golden	E
Pleodendron macranthum	
Chupacallos	E
Polygala lewtonii	
Polygala, Lewton's	E
Polygala smallii	
Polygala, tiny	E
Polygonella basiramia	
Wireweed	E
Polygonella myriophylla	
Sandlace	E
Prunus geniculata	
Plum, scrub	E
Rhododendron chapmanii	
Rhododendron, Chapman	E
Rhus michauxii	
Sumac, Michaux's	E
Ribes echinellum	
Gooseberry, Miccosukee	T
Sagittaria fasciculata	
Arrowhead, bunched	E
Sagittaria secundifolia	
Water-plantain, Kral's	T
Sarracenia oreophila	
Pitcher-plant, green	E
Sarracenia rubra alabamensis	
Pitcher-plant, Alabama canebrake	E
Sarracenia rubra ssp. jonesii	
Pitcher-plant, mountain sweet	E
Schoepfia arenaria	
No common name	T
Scutellaria floridana	
Skullcap, Florida	T
Scutellaria montana	
Skullcap, large-flowered	T
Silene polypetala	
Campion, fringed	E
Sisyrinchium dichotomum	
Irisette, white	E
Solanum drymophilum	
Erubia	E
Solidago albopilosa	
Goldenrod, white-haired	T
Solidago shortii	
Goldenrod, Short's	E
Solidago spithamaea	
Goldenrod, Blue Ridge	T
Spigelia gentianoides	
Pinkroot, gentian	E
Stahlia monosperma	T

Cobana negra	
Styrax portoricensis	
Palo de jazmin	E
Ternstroemia luquillensis	
Palo colorado	E
Ternstroemia subsessilis	
No common name	E
Thalictrum cooleyi	
Meadowrue, Cooley's	E
Trichilia triacantha	
Bariaco	E
Trillium persistens	
Trillium, persistent	E
Trillium reliquum	
Trillium, relict	E
Vernonia proctorii	
No common name	E
Warea amplexifolia	
Warea, wide-leaf	E
Warea carteri	
Mustard, Carter's	E
Xyris tennesseensis	
Grass, Tennessee yellow-eyed	E
Zanthoxylum thomasianum	
Prickly-ash, St. Thomas	E
Ziziphus celata	
Ziziphus, Florida	E

Conifers and Cycads

Torreya taxifolia	
Torreya, Florida	E

Ferns and Allies

Adiantum vivesii	
No common name	E
Asplenium scolopendrium var. americanum	
Fern, American hart's-tongue	T
Cyathea dryopteroides	
Fern, Elfin tree	E
Elaphoglossum serpens	
No common name	E
Isoetes louisianensis	
Quillwort, Louisiana	E
Isoetes melanospora	
Quillwort, black spored	E
Isoetes tegetiformans	
Quillwort, mat-forming	E
Polystichum calderonense	
No common name	E
Tectaria estremerana	
No common name	E
Thelypteris inabonensis	
No common name	E

Thelypteris pilosa var. alabamensis	
Fern, Alabama streak-sorus	T
Thelypteris verecunda	
No common name	E
Thelypteris yaucoensis	
No common name	E
Lichens	
Cladonia, Florida perforate	
Cladonia perforata	E
Lichen, rock gnome	
Gymnoderma lineare	E

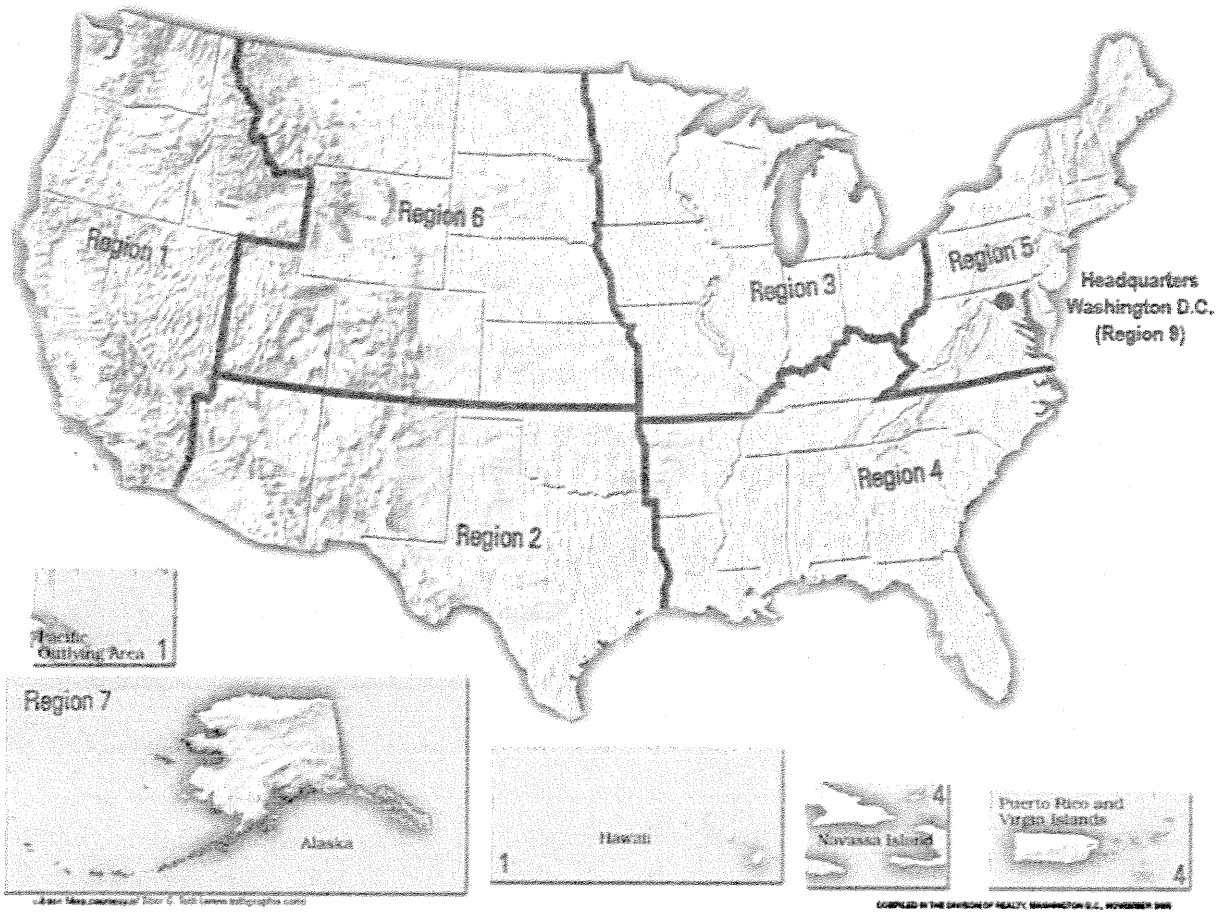
[1]STATUS: E=endangered, T=threatened, PE=proposed endangered, PT=proposed threatened, CH=critical habitat, PCH=proposed critical habitat, C=candidate species

Identify listed, proposed and candidate species as well as designated and proposed critical habitat within the action area and their status. The action area includes the immediate area where the proposed action will occur, as well as any other areas where direct or indirect impacts of the action may be expected. For example, effects of an action in the headwaters of a stream may affect endangered fish that occur 20 miles downstream. A compilation of species or critical habitats that possibly occur in the action area may be generated by the Project Leader, or it may be requested from the appropriate Ecological Services Office.

Note: All experimental populations of listed species are treated as threatened species. However, for the purposes of this Section 7 consultation, they are treated as species *proposed* for listing if they occur off National Wildlife Refuge or National Park System lands and they are classed as "non-essential" experimental populations.

List all listed, proposed or candidate species and designated or proposed critical habitat that may occur within the action area. This informs the reviewer what species have been considered.

VI. Location: All of U.S. Fish and Wildlife Region 4 and the Caribbean.


Region 1
Region 6
Region 3
Region 5
Headquarters
Washington D.C.
(Region 9)
Region 4
Region 2
Pacific Outlying Area 1
Region 7
Alaska
Hawaii
1
4
Nawassa Island
Puerto Rico and
Virgin Islands
4

VII. Determination of Effects:

A. Explanation of effects of the action on species and critical habitats in items V and VI.

SPECIES/ CRITICAL HABITAT	IMPACTS TO SPECIES/CRITICAL HABITAT
All in Parts V and VI above.	Beneficial effects stemming from rapid petroleum product removal for spill cleanup efforts thereby minimizing wildlife exposure and protection of habitat from further damage.
	Physical application activities may cause mechanical damage to environments. This may be particularly true in terrestrial recovery procedures that may damage habitat outside the "footprint" of the spill. This would increase the overall area at risk compared to the spill area.
	Physical recovery and removal activities may cause mechanical damage to species and habitats. This may be particularly true in terrestrial recovery procedures that could damage habitat outside the "footprint" of the spill. This would increase the overall area at risk compared to the spill area.
	Waterborne or terrestrial availability and ingestion of un-recovered solidifier materials saturated with petroleum products may cause greater toxicity than estimated from toxicity of solidifier alone.

B. Explanation of actions to be implemented to reduce adverse effects:

SPECIES/ CRITICAL HABITAT	ACTIONS TO MINIMIZE IMPACTS
All in Parts V and VI above.	Only employ the use of solidifiers in cleanup effort when in strict agreement with the stipulated limited pre-approval described above in Part IV (e.g. full recovery immediately after application).
	Do not employ solidifiers when benefits of cleanup are less than or equal to the damage caused by application and removal of solidifiers.
	When possible, prior to applications of solidifiers contact the appropriate Service field office in the response area for

SPECIES/ CRITICAL HABITAT	ACTIONS TO MINIMIZE IMPACTS
	minimization measures.
	If listed species or critical habitat occur in the area, make all possible effort to avoid contact and/or harassment of species and initiate post-application/recovery emergency consultation procedures on action with the appropriate Service field office in the response area for minimization measures.

VIII. Effect Determination and Response Requested:

SPECIES/ CRITICAL HABITAT	DETERMINATION[1]			RESPONSE[1] REQUESTED
	NE	NA	AA	
All in V and VI above.		X		Yes

[1]DETERMINATION/ RESPONSE REQUESTED:

NE = no effect. This determination is appropriate when the proposed action will not directly, indirectly, or cumulatively impact, either positively or negatively, any listed, proposed, candidate species or designated/proposed critical habitat. Response Requested is optional but a AConcurrence@ is recommended for a complete Administrative Record.

NA = not likely to adversely affect. This determination is appropriate when the proposed action is not likely to adversely impact any listed, proposed, candidate species or designated/proposed critical habitat or there may be beneficial effects to these resources. Response Requested is a@Concurrence@.

AA = likely to adversely affect. This determination is appropriate when the proposed action is likely to adversely impact any listed, proposed, candidate species or designated/proposed critical habitat. Response Requested for listed species is AFormal Consultation@. Response requested for proposed and candidate species is AConference@.

Jay M Timmony — 10 May 2006

Signature (originating station) **date**

Ecologist

Title

26 April 2006

IX. Reviewing Ecological Services Office Evaluation:

A. Concurrence _X_ Nonconcurrence _____

B. Formal consultation required _____

C. Conference required _____

D. Informal conference required _____

E. Remarks (attach additional pages as needed):

Signature 7/3/06 date

Acting Assistant Regional Director of Ecological Services Southeastern Region
Title Office