



Finding of No Significant Impact

Removal of Hurricane Rita Related Debris in the Little Pine Island – Pine Island Bayou Corridor Unit

Purpose and Need

The National Park Service (NPS) proposes to remove all large woody debris and foreign debris (e.g., building materials and appliances) related to Hurricane Rita that meet the definition of Type II or Type III (excluding root balls and/or stumps) from the Little Pine Island – Pine Island Bayou Corridor Unit (LPI Corridor Unit) of Big Thicket National Preserve. Type II debris collections consist of downed trees that are long enough to span the channel, and in fact extend from bank-to-bank at an elevation at or above the top of the bank, and are of sufficient size (diameter and length) to serve as “structural components” in the potential formation of more substantial debris jams. Type III debris collections consist of large collections of woody debris and downed trees of any size that span the channel from at least bank-to-bank, and extend to an elevation well above the top of the bank and into both sides of the floodplain. The project area consists of the portion of the LPI Corridor Unit beginning at the Woodway Boulevard Bridge and continuing east to the boundary of the LPI Corridor Unit at U.S. Highway 69.

The purpose and need of this project is to address Hurricane Rita related large woody debris and other accumulations of foreign debris in portions of the LPI Corridor Unit with the potential to collect further debris and create obstructions that could contribute to out-of-bank flows or atypical flooding beyond what currently exists.

Although the Pine Island Bayou watershed has an established history of flooding, many residents adjacent to the LPI Corridor Unit believe that large woody debris and foreign debris related to Hurricane Rita has contributed to out-of-bank flows and atypical flooding in adjacent communities, and the local county government has requested that NPS investigate this matter. In addition, field reconnaissance identified areas of large woody debris and foreign debris with the potential to collect further debris and create obstructions that could contribute to out-of-bank flows or atypical flooding beyond what currently exists.

The objectives of this project are to:

- Work cooperatively with the public and county government to protect Preserve resources and values, avoid and resolve potential conflicts, enhance visitor use and recreation within the LPI Corridor Unit, and address mutual interests in the quality of life of community residents.
- Considering the extent it is compatible with public safety, allow weather-related processes and associated disturbances to recover as naturally possible.
- Prevent impairment of Preserve resources and limit impacts on Preserve operations and management.

Preferred Alternative

The Preferred Alternative (Alternative B, Remove Large Woody Debris and Foreign Debris from the Channel and Dispose of it Completely) is to conduct a one-time removal of all large woody debris and foreign debris (e.g., building materials and appliances) related to Hurricane Rita that meet the definition of Type II or Type III (excluding root balls and/or stumps) from the LPI Corridor Unit of Big Thicket National Preserve. The NPS chose Alternative B as its Preferred Alternative because it best meets the objectives of the project; it is consistent with NPS management policies, laws, regulations, and plans; it will improve the visitor experience in the area by removing obstacles and foreign debris; and it will maintain the ecological integrity of the bayou. One or a combination of the following methods will be used to conduct the one-time removal of debris. Methods implemented will be based on on-the-ground conditions of the bayou at the time of removal.

Helicopter. This method will involve both a ground crew and helicopter for debris removal activities during either periods of high or low water in the bayou. A ground crew will access eligible large woody debris and foreign debris collections within the Preserve on foot or by small boat. Root balls on trees, if present, will be cut off by ground crews. The helicopter will lower a grapple or choker for the ground crew to attach to individual trees or woody debris collections. Once the debris is attached, the helicopter will pull the debris out, fly it to the disposal site, and drop it. The process will then be repeated until all eligible large woody debris and foreign debris collections are removed. The helicopter flight path will be restricted to locations outside of public areas, neighborhoods, and high tension electrical transmission lines. It is assumed that given the location of the disposal site, it will take approximately 5 minutes or less per round trip to pick up and drop off debris.

Boat/Barge. This method will involve the use of a boat and barge during a period of high water in the bayou to access eligible large woody debris and foreign debris collections for removal. The equipment will access debris collections within the bayou channel from three access points along the LPI Corridor Unit. The boat/barge method will utilize a 10-foot-wide working space, which will require removal of some standing trees within the bayou channel itself. Multiple round trips to debris collection locations will be required, depending on the size and weight of the debris. Debris will then be hauled from collection locations in trucks to the disposal site.

For both methods, the debris disposal site that is proposed for this project was used by Hardin County immediately after Hurricane Rita for county debris removal activities. As such, Hardin County has an existing agreement with the landowner of the property to use the site for this purpose. The NPS will utilize this agreement through the county for debris disposal. The disposal site is located approximately 4 miles north/northeast of the project location. All woody debris will be ground up and spread out on the property as compost.

Activities will follow all NPS policies and safety requirements. A final determination of debris locations will be made by NPS prior to commencing removal activities. A NPS staff member will be on site during activities to identify eligible debris on a case-by-case basis for the contractor.

Foreign debris, such as building materials, manufactured items, and other loose man-made debris encountered within the bayou channel will be removed only if it can be accomplished using the same access and disturbance as the methods described above.

All foreign debris will be disposed of in the county landfill. Items not accepted by the county landfill (tires, batteries, appliances that use freon, etc.) will be legally disposed of at alternate sites as determined by Hardin County. Permits and/or licenses, as well as costs for hauling and disposing of material, will be the responsibility of the contractor.

The public will be notified in advance of closures in portions of the Preserve in order to address debris within the bayou channel in a safe manner. Because this will be a one-time debris removal project, the NPS will not conduct subsequent monitoring.

Mitigation Measures

Mitigation Measures of the Preferred Alternative	
Resource Area	Mitigation Measure
General	NPS personnel will identify debris to be removed or broken up and continuously monitor the work.
	Spills will be prevented/contained and reported to NPS.
	To minimize possible petrochemical spills from debris removal equipment, the contractor will regularly monitor and check equipment to identify and repair any leaks.
	Fueling of vehicles and equipment will take place outside the Preserve whenever possible; if fueling within the Preserve is required, these activities will be attended by no less than two people, and will be completed over absorbent materials and a physical barrier, such as a tarp.
Wetlands	Ground crews will avoid damaging any part or whole of wetland vegetation.
Water Resources	No boat/helicopter/chain saw/vehicle fuels will be allowed to enter the water or adjacent floodplain.
	Only four-stroke boat motors will be utilized.
Soils	To minimize the amount of ground disturbance from ground crews, crews will be limited to five members in any area.
	Employees and debris removal crews will be required to park on roads or in previously disturbed areas to minimize the amount of ground disturbance at the access sites.
	Root balls that are integrated into the soil will be detached before the large woody debris is removed.
Vegetation	Weed control measures (e.g., cleaning/washing of vehicles/vessels, equipment, and personal equipment [clothing, etc.] before entering/re-entering the Preserve) will be implemented to help minimize the potential for the introduction and spread of nonnative species.
	Live vegetation cutting in order to navigate the bayou using the boat/barge methodology will be limited to only the amount necessary to accomplish project objectives. Standing mature trees, particularly cypress, will be avoided.
Fish and Wildlife and Species of Special Concern	Debris removal activities will not occur from February 15 through August 31 to avoid the nesting period of species of special concern and neotropical migratory birds.
	NPS personnel trained in the identification of the species of special concern that may occur in the project area will accompany debris contractors into the project area, and will survey the area immediately surrounding debris locations for the species. If a species of special concern is found, debris removal will be postponed pending coordination with the Texas Parks and Wildlife Department to avoid impacts to the species.
Park Operations	As appropriate, helicopter operations will be coordinated with NPS aviation specialists to minimize the risks to health and safety.
	The regular use of two-way communications between ground and flight crews will minimize risks associated with the use of the helicopter.
	Area closures will minimize the potential for health and safety impacts to Preserve visitors during debris removal activities.
	The county will fund and hire the contractor to perform work.

Alternatives Considered

Two alternatives other than Alternative B were evaluated in the environmental assessment (EA) and include the No Action Alternative (Alternative A) and Alternative C (Eliminate the Structural Integrity of Large Woody Debris and Foreign Debris in the Channel). The No Action Alternative is a continuation of current conditions, under which the NPS would not remove any large woody debris or foreign debris related to Hurricane Rita and would continue to maintain, restore, and protect the natural resources, functions, and values of floodplains within the Preserve and allow weather-related processes and the associated disturbances to recover naturally. Under Alternative C, eligible large woody debris related to Hurricane Rita (Type II or Type III) would be broken up by removing the logs and other debris that provide the "structure" for the potential accumulation of additional debris that could change the current potential for out-of-bank flows or atypical flooding beyond what currently exists. One or a combination of the methods (overland routes and/or boats) would be used, and remnants of large woody debris would be left in the bayou active channel.

Environmentally Preferred Alternative

The environmentally preferred alternative is the alternative that will promote the national environmental policy as expressed in Section 101 of the National Environmental Policy Act (NEPA). This includes:

1. Fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations;
2. Assuring for all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
3. Attaining the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
4. Preserving important historic, cultural, and natural aspects of our national heritage and maintaining, wherever possible, an environment that supports diversity and variety of individual choice;
5. Achieving a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities;
6. Enhancing the quality of renewable resources and approaching the maximum attainable recycling of depletable resources (NEPA, Section 101).

Simply put, the environmentally preferred alternative is the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources.

Alternative C (Eliminate the Structural Integrity of Large Woody Debris and Foreign Debris in the Channel) is the environmentally preferred alternative because it best meets the definition established by the Council on Environmental Quality (CEQ). Alternatives B and C meet all of the criteria for the environmentally preferred alternative at various levels; however, the degree of environmental effects resulting from eliminating the structural integrity of large woody debris and foreign debris would be less than removal of large woody debris and foreign debris, as under Alternative B. Alternative A, the No Action Alternative, meets the definition established by the CEQ to a large degree; however, it does not assure for all generations safe surroundings or attain the widest range of beneficial uses of the environment without risk of health and safety due to the possibility for large woody debris and foreign debris to collect further debris and create obstructions that could change the current potential for out-of-bank flows or atypical flooding beyond what currently exists.

The NPS chose Alternative B as its Preferred Alternative because it best achieves the project objectives while limiting adverse impacts on Preserve resources and values. In particular, Alternative B best meets the objective of working cooperatively with the public and county government to protect Preserve resources and values, avoid and resolve potential conflicts, and address mutual interests in the quality of life of community residents, without compromising or impairing Preserve resources. Alternative C was selected as the environmentally preferred alternative because downed trees and woody debris would be structurally disrupted but left in place, which has ecological benefits and less impact on the immediate environment of

the action. However, the potential for remnants of the large woody debris collections to be transported downstream and redistributed within the active channel, resulting in additional channel blockages, could create greater conflict with, and/or diminish the quality of life of, community residents and visitor use in the Preserve compared to Alternative B. The use of a helicopter under Alternative B will allow for more opportunities to remove larger foreign debris that could not be removed under Alternative C, and to minimize direct ground impact in the area of effect. Alternative B will also result in the removal of some woody debris that is currently impeding certain visitor access in the bayou (recreational canoe use). Although Alternative B will not leave targeted debris in place, it will leave behind a substantial amount of unaltered woody debris and will allow for natural recovery in areas disturbed. Overall, Alternative B provides the best balance between the varying objectives of the project with minimal disruption of ecological processes.

Why the Preferred Alternative Will Not Have a Significant Effect on the Human Environment

As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

The one-time removal of large woody debris collections under the Preferred Alternative, while employing the mitigation measures, will result in short- and long-term, minor adverse impacts to fish and wildlife and short- and long-term, negligible to possibly moderate adverse impacts on Preserve operations and health and safety of Preserve employees as a result of removal by helicopter or boat/barge. Adverse effects to fish and wildlife will include noise and physical disturbances from personnel, their hand tools, boats, and the helicopter that can displace fish and wildlife from the area in the short term and/or remove habitat in the long term. None of these impacts will be significant. Also, although it is expected that the removal operations will occur safely and effectively, there could be short-term, minor to possibly moderate adverse impacts on health and safety from the potential risks associated with use of the helicopter, handheld equipment such as saws, and potential for trips and falls during removal efforts. The Preferred Alternative will also have short-term, local, negligible to minor, adverse impacts on vegetation from the removal operations. These adverse impacts will not be significant. In addition, should continued flooding under the Preferred Alternative generate additional need for outreach or coordination, there could be some long-term negligible to minor adverse impacts on Preserve operations, primarily administration and interpretation/education. However, the removal of debris is expected to alleviate some community concerns regarding flooding and prevent the potential buildup of debris in the areas treated, resulting in beneficial effects that outweigh the adverse impacts that will or could occur from the one-time removal.

Degree of effect on public health or safety

Implementation of the Preferred Alternative will result in long-term negligible beneficial impacts on public health and safety and adjacent communities as the potential for atypical flooding decreases with removal of debris in the bayou. Area closures will minimize the potential for impacts to Preserve visitors during removal activities. The hauling and disposal of the material will not affect the health and safety of Preserve visitors.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, wetlands, wild and scenic rivers, or ecologically critical areas

The Pine Island Bayou is an important biological area in southeastern Texas. The bayou is an ecologically important area as well as a wetland. The impacts expected from the Preferred Alternative, given the mitigation measures that will be in effect, will not affect these characteristics of the area. Historic and cultural resources are discussed under a separate significance criterion below.

Degree to which effects on the quality of the human environment are likely to be highly controversial

This project generated some controversy related to the opposing points of view between Hardin County and citizens of adjacent communities and environmental interest groups and other concerned citizens regarding whether this action should be taken. As documented in the EA, the project area and adjacent communities have a history of flooding, which has resulted in extensive damage to communities. Since Hurricane Rita occurred in 2005, the county and private landowners maintain the opinion that adjacent communities to the project area have experienced flooding with less rainfall and floodwaters take longer to recede. They claim that this is due to downed trees, limbs, leaves, and shifted soil the county sustained as a result of Hurricane Rita. The county proposed addressing the issues by removing debris from identified problem areas throughout the county including drainage ditches, streams, and bayous. Pine Island Bayou was identified by State and County officials as an area greatly in need of debris removal. However, because portions of the bayou are located in the Preserve, the NPS requested that the county fund a study on the types of debris in the bayou and the effects of removing such debris on the ecosystem. The study and potential debris removal were included in activities for this project.

Environmental interest groups and other concerned citizens maintain the opinion that flooding is a natural occurrence and function of the ecosystem in the area, and the reason that adjacent communities are experiencing flooding is due to building within the 100-year floodplain. The groups maintain the opinion that the U.S. Army Corps of Engineers and others have definitively spoken about flooding issues within the bayou, and that there is no economically feasible way to provide flood control to these areas. Environmental interest groups and other concerned citizens feel that the Preserve should not conduct debris removal that has adverse ecological effects, degrade the Preserve environment in order to attempt flood control for adjacent communities, and set precedent in doing so.

Although there is a difference of opinion about the effects, the effects themselves are not highly controversial, and the EA does acknowledge and analyze expected adverse and beneficial effects to both the natural and human environments and the floodplain expected from the action, none of which are significant. Per CEQ regulations implementing NEPA at 40 CFR 1508.27, "significantly" as used in NEPA also includes the degree to which the effects on the quality of the human environment are likely to be highly controversial. The term "controversial" relates to the nature and extent of environmental effects, not to a difference of opinion over whether the proposed action is warranted, given the NPS interpretation and implementation of its own regulations.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks

There were no highly uncertain, unique, or unknown risks identified during either preparation of the EA or the public review period.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration

The Preferred Alternative neither establishes NPS precedent for future actions with significant effects nor will it represent a decision in principle about a future consideration. The proposed action is a one-time removal of a limited number of large woody debris collections associated with Hurricane Rita and does not constitute flood control. By limiting the scope of the action and implementing mitigation controls, the proposed action complies with Section 4.1.5 of the NPS *Management Policies 2006*, because it is designed to allow for as much natural recovery in the Preserve as possible while protecting the safety of people by eliminating or reducing the potential for atypical out-of-bank flooding potentially caused by the debris collections.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts

Cumulative effects were analyzed in the EA and no significant cumulative impacts were identified.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources

There are no known districts, sites, highways, structures, or objects listed on National Register of Historic Places within the project area. Compliance with Section 106 of the National Historic Preservation Act was completed with a concurrence with the NPS determination of no historic properties affected by the Texas State Historic Preservation Officer on June 5, 2008. Should archeological resources be found within the project area during implementation, activities in the vicinity will halt and NPS will consult with the State Historic Preservation Officer prior to commencing activities.

There are no known historical, cultural, or sacred sites associated with the Alabama-Coushatta Tribe of Texas within the project area. The NPS received concurrence on this determination from the Acting Lead on Historic Preservation of the Tribe on April 2, 2008.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat

There are no federally listed threatened and endangered species that occur or have the potential to occur within the project area. The Clear Lake Ecological Services Office of the U.S. Fish and Wildlife Service indicated that they had no concerns about federally-listed species being affected by the implementation of the project on April 2, 2008.

Consultation with the Texas Parks and Wildlife Department on January 17, 2008, determined that one state-listed threatened species has the potential to occur within the project area. Six other state-listed threatened species were added to the EA and impacts to the species were analyzed as a result of public comments on the EA. No comments were received from the Texas Parks and Wildlife Department on the EA.

Whether the action threatens a violation of federal, state, or local environmental protection law

The Preferred Alternative violates no federal, state, or local environmental protection laws.

Impairment of Preserve Resources or Values

In addition to reviewing the list of significance criteria, NPS staff determined that implementation of the Preferred Alternative will not constitute an impairment of the Preserve's resources and values. This determination is based on a thorough analysis of the impacts described in the EA and this Finding of No Significant Impact, agency and public comments received, and professional judgment in accordance with the NPS *Management Policies 2006* (August 31, 2006). As described in the EA and this Finding of No Significant Impact, implementation of the Preferred Alternative will not result in major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Big Thicket National Preserve; (2) key to the natural or cultural integrity of the Preserve or to opportunities for enjoyment of the Preserve; or (3) identified as a goal in the Preserve's general management plan or other relevant NPS planning documents.

Unacceptable Impacts

The impact threshold at which impairment occurs is not always readily apparent. Therefore, the NPS applies a standard that offers greater assurance that impairment will not occur. The NPS will do this by avoiding impacts that it determines to be unacceptable. These are impacts that fall short of impairment but are still not acceptable within a particular park's environment. Park managers must not allow uses that will cause unacceptable impacts; they must evaluate existing or proposed uses and determine whether the associated impacts on park resources and values are acceptable. The implementation of the Preferred Alternative will not result in unacceptable impacts to Preserve resources and values.

Appropriate Use

Sections 1.5 and 8.12 of *NPS Management Policies 2006* underscore the fact that not all uses are allowable or appropriate in units of the national park system. The proposed use was screened to determine consistency with applicable laws, executive orders, regulations, and policies; consistency with existing plans for public use and resource management; actual and potential effects to Preserve resources; total costs to the NPS; and whether the public interest would be served. As detailed in the EA, the Preferred Alternative to address Hurricane Rita related large woody debris and foreign debris in a portion of the LPI Corridor Unit is an appropriate use or action since it is consistent with applicable laws, executive orders, regulations and policies; is consistent with existing Preserve plans for public use and resource management; will not cause impairment of, or unacceptable impacts on, Preserve resources and values; will result in nominal costs to the NPS; and will serve the public interest.

Public Involvement

The EA was made available for public review and comment during a 35-day period ending May 17, 2008. The standard 30-day review period on the EA was extended an additional 5 days due to public request. A total of 70 responses were received; 47 of these were form letters. This total includes 1 letter from a city government, 2 letters from organizations (1 from a conservation organization and 1 from a civic group), and 67 individual letters. A preference for removal of all of debris within the bayou was expressed by most of the respondents, while others preferred no activity within the Preserve at all. Of the 70 responses, all but 3 were from the immediate area.

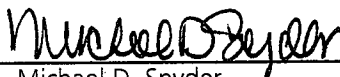
Substantive comments on the EA centered on the purpose and need for the project, missing information, the effects of alternatives, and consistency with plans and policies. These concerns resulted in some changes to the text of the EA that are addressed in Errata Sheet attached to this FONSI. The FONSI and Errata Sheet will be sent to the mailing list for the project.

Conclusion

The Preferred Alternative, under this Finding of No Significant Impact, does not constitute an action that normally requires preparation of an environmental impact statement (EIS). The Preferred Alternative will not have a significant effect on the human environment. Negative environmental impacts that could occur are negligible to moderate in intensity. There are no significant impacts on public health, public safety, threatened or endangered species, sites or districts listed in or eligible for listing in the National Register of Historic Places, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the action will not violate any federal, state, or local environmental protection law.

Based on the foregoing, it has been determined that an EIS is not required for this project and thus will not be prepared.

Approved:



Michael D. Snyder
Director, Intermountain Region, National Park Service



Date

Errata Sheet

Removal of Hurricane Rita Related Debris in the Little Pine Island - Pine Island Bayou Corridor Unit Environmental Assessment Big Thicket National Preserve

Substantive comments to the environmental assessment centered on the purpose and need for the project, missing information, the effects of alternatives, and consistency with plans and policies. These concerns, which are addressed below, resulted in some changes to the text of the environmental assessment.

Text Changes

Purpose and Need, General Management Plan, Page 11, first paragraph, line 7, strike the following text: "it would provide baseline data on flooding and the effects of LWD and foreign debris to contribute to out-of-bank flows or atypical flooding beyond what currently exists that could assist with future planning and management efforts."

Purpose and Need, Resource Management Plan, Page 12, second paragraph, revise the sentence to read: "The Resource Management Plan specifically addresses the complex issue of flooding on private lands adjacent to the Preserve, and recommends that Preserve staff attempt to stay abreast of the issue and proposals through the legislative and administrative processes of the State of Texas and continue to maintain a dialogue with other agencies and comment on proposals as they develop."

Purpose and Need, Resource Management Plan, Page 12, third paragraph, line 11, strike the following text: "through providing baseline data on flooding and the effects of large woody debris and foreign debris to contribute to out-of-bank flows or atypical flooding beyond what currently exists; it would provide baseline data on flooding and the effects of large woody debris and foreign debris to contribute to out-of-bank flows or atypical flooding beyond what currently exists that could assist with future planning and management efforts."

Purpose and Need, Impact Topics Dismissed From Further Analysis, Soundscapes, Page 20, strike the last paragraph and replace with the following:

"The natural soundscape of Big Thicket National Preserve was studied in the spring of 1998 to determine ambient sound levels (Foch, 1999). Sound levels were measured at 11 locations Preserve-wide during this study, and both short and long-term data were collected. Most sounds occurring in the Preserve were found to be from wind in trees, but a variety of sounds were captured and included other natural sounds like the dawn chorus of birds and insects/amphibians at night, as well as human caused sounds such as aircraft, powerboats, jet skis and a natural gas powered generator at an oil and gas production facility. The L90 ambient sound levels of the Preserve were 36 to 39 decibels.

Sound levels of a helicopter hovering 500 feet overhead at 200 feet away are 72 decibels, and a chainsaw is 110 decibels at the source. The effect of this temporary increase in noise would depend on the location and number of sensitive receptors, which in this case, are wildlife, Preserve visitors and residents near the project area, in relation to the debris piles to be removed. Understanding that any noise generated from the helicopter and/or chainsaw would be temporary and adverse, the overall effect when comparing the decibel levels of these pieces of equipment to that of the background decibel level of the preserve would be negligible (at the lowest levels of detection, barely perceptible, and not measurable) to minor (measurable or perceptible, but it is slight, localized, and would result in a limited alteration or a limited area), and therefore, the topic of soundscapes has been dismissed from further analysis in the EA."

Alternatives Considered, Description of Alternatives Carried Forward, Remove Large Woody Debris and Foreign Debris from the Channel and Dispose of it Completely (Alternative B, Preferred Alternative),

Helicopter, Page 23, delete the last sentence "Helicopter use would only occur by approved methods as determined by NPS aviation specialists."

Alternatives Considered, Description of Alternatives Carried Forward, Remove Large Woody Debris and Foreign Debris from the Channel and Dispose of it Completely (Alternative B, Preferred Alternative), Boat/Barge, Page 23, line 6, add sentence after line "...some standing trees within the bayou channel itself," "Ground crews would utilize hand tools such as clippers, saws, and chainsaws to remove smaller vegetation and vegetation above the water line and clippers and saws only below the water line."

Alternatives Considered, Alternatives Considered and Dismissed, Page 24, add the following alternative after the last sentence of the first paragraph:

"Remove Foreign Debris Only

Under this option only foreign debris (building materials, appliances, tires, etc.) would be removed from the bayou active channel and disposed of outside of the Preserve boundary. This option was dismissed because it did not address large woody debris collections related to Hurricane Rita, and therefore did not meet the purpose and need of the project, which is to address potential future effects where large woody debris and accumulations of foreign debris could possibly collect further debris and create obstructions that could change the current potential for out-of-bank flows or atypical flooding beyond what currently exists."

Alternatives Considered, Mitigation Measures, Vegetation, Page 27, first paragraph, change sentence to read: "Weed control measures (e.g., cleaning/washing of vehicles/vessels, equipment, and personal equipment [clothing, etc.] before entering/re-entering the Preserve) would be implemented to help minimize the potential for the introduction and spread of nonnative species."

Alternatives Considered, Mitigation Measures, Vegetation, Page 27, first paragraph, add sentence: "Live vegetation cutting in order to navigate the bayou using the boat/barge methodology would be limited to only the amount necessary to accomplish project objectives. Standing mature trees, particularly cypress, would be avoided."

Alternatives Considered, Mitigation Measures, Species of Special Concern, Page 27, second paragraph, change heading to read "Fish and Wildlife and Species of Special Concern". Change first and second sentences to read: "NPS personnel trained in the identification of the species of special concern that may occur in the project area would accompany debris contractors into the project area and would survey the area immediately surrounding debris locations for the species. If a species of special concern is found, debris removal would be postponed pending coordination with the Texas Parks and Wildlife Department to avoid impacts to the species." Add another item to the list with a measure that states "Debris removal activities would avoid the nesting period of species of special concerns and neotropical migratory birds."

Alternatives Considered, Alternative Summaries, Page 32, Table 2, Fish and Wildlife impact topic, Alternative B, third sentence replace with: "Overall, removing the large woody debris collections under this alternative while employing the mitigation measures indicated would result in short- and long-term, minor adverse impacts."

Alternatives Considered, Alternative Summaries, Page 32, Table 2, Species of Special Concern impact topic, Alternative A second sentence replace with: "Cumulative impacts would be long-term, localized, minor to moderate, and adverse, with the proposed actions contributing only slightly, if at all, to these impacts."

Alternatives Considered, Alternative Summaries, Page 32, Table 2, Species of Special Concern impact topic, Alternative B first and second sentence replace with: "Removing the approximately four Type II and Type III large woody debris collections from the bayou under this alternative would create noise and physical disturbances that would adversely impact species of special concern. However, by employing the mitigation measures indicated, these, along with any other potential impacts would only be short-term and negligible."

Alternatives Considered, Alternative Summaries, Page 32, Table 2, Species of Special Concern impact topic, Alternative B third sentence: replace "minor" with "minor to moderate".

Alternatives Considered, Alternative Summaries, Page 32, Table 2, Species of Special Concern impact topic, Alternative C first sentence: replace "create noise disturbances" with "create noise and physical disturbances" and replace "impact the three species of special concern." with "impact species of special concern."

Alternatives Considered, Alternative Summaries, Page 32, Table 2, Species of Special Concern impact topic, Alternative C third sentence: replace "minor" with "minor to moderate".

Affected Environment, Species of Special Concern, Page 45, third paragraph, add the following sentences after the first sentence ending with (Hannah 2008): "Though not documented, two other species, the alligator snapping turtle (*Macrolemys temminckii*) and the timber rattlesnake (*Crotalus horridus*) have the potential to occur in the LPI Corridor Unit. The American swallow-tailed kite (*Elanoides forficatus*), bald eagle (*Haliaeetus leucocephalus*), peregrine falcon (*Falco peregrinus*), arctic peregrine falcon (*Falco peregrine tundrius*), and the white-faced ibis (*Plegadis chihi*) are migratory transients that may also occur in the LPI Corridor Unit.

Affected Environment, Species of Special Concern, Page 45, third paragraph, second sentence, replace "Therefore, only the above three" with "These".

Affected Environment, Species of Special Concern, Page 46, Table 4, Common Name, replace "Canebrake" with "Timber" and under Scientific Name: delete "*articaudatus*".

Affected Environment, Species of Special Concern, Page 47, Delete first three paragraphs.

Affected Environment, Species of Special Concern, Page 47, add the following paragraphs after the last sentence of paragraph four:

"Alligator Snapping Turtle (*Macrolemys temminckii*): The alligator snapping turtle is listed as state threatened. Considered one of the largest freshwater turtles in the world, it lives in deep, fresh waters with muddy bottoms (such as rivers, lakes, oxbows, and sloughs) and occasionally enters brackish water. The species is rare mainly due to international and domestic demand for its meat, although it has also declined as a result of habitat loss from reservoir construction, channelization of streams and rivers, placement of dredge spoil on riverbanks, recreational use of riverbanks and sandbars, removal of snags and water pollution. Almost all of the units of the Preserve provide habitat for alligator snapping turtles. Alligator snappers have been documented in Turkey Creek, the Neches River, and most recently in Menard Creek (NPS 2005).

Timber Rattlesnake (*Crotalus horridus*): The timber rattlesnake is listed as state threatened. In the past, two subspecies of timber rattlesnake were believed to be in east Texas: the canebrake rattlesnake and the timber rattlesnake; however, recent research suggests that the canebrake rattlesnake is simply a color variant and not a separate subspecies (NPS 2005 and CPACM 2003). Timber rattlesnakes prefer moist lowland forests and hilly woodlands or thickets near water sources such as rivers, lakes, ponds, streams and swamps where tree stumps, logs and branches provide refuge (TPWD 2007). Timber rattlesnakes have been documented in the Lance Rosier Unit, Turkey Creek Unit, and Big Sandy Unit of the Preserve (NPS 2005).

American Swallow-Tailed Kite (*Elanoides forficatus*): American swallow-tailed kites (state threatened) are migratory raptors that inhabit bottomland hardwood forests along major river bottoms in the southeastern United States and winter in South America. Kites historically bred throughout the southeastern United States; however, populations have declined throughout the southeast in recent years. A recent survey of swallow-tailed kites in east Texas documented 277 sightings and only one nest. Most sightings of kites in the Preserve have been reported in spring and summer months along the mid- and upper-portions of the Neches River. Although no kite nests have been found, the

routine sightings of this species along the Neches River strongly suggest that it may be nesting in mature bottomland forests in or near the Preserve (NPS 2005).

Bald Eagle (*Haliaeetus leucocephalus*): Although formerly common, bald eagles (state threatened) are rare residents in east Texas. They prefer large lakes and rivers with tall trees along the shoreline. Bald eagles have been sighted most frequently near McQueen's landing in the Upper Neches River Corridor Unit of the Preserve, and at the confluence of Menard Creek and the Trinity River in the Menard Creek Corridor unit (NPS 2005).

Peregrine Falcon (*Falco peregrinus*): Two subspecies of peregrine falcon are found in Texas: the American peregrine (*Falco peregrinus anatum*) and the arctic peregrine (*Falco peregrinus tundrius*). Both species were federally delisted on August, 25, 1999, but remain state listed as endangered and threatened, respectively. The American peregrine is a resident of the Trans-Pecos region, including Big Bend National Park, and the Chisos, Davis, and Guadalupe mountain ranges. Arctic peregrines migrate through Texas twice a year to and from their wintering areas in South America. They stop on the Texas coast to feed before continuing their migration. In Big Thicket, peregrines (most likely the arctic subspecies) have been documented along the Neches River and in or near the Turkey Creek and Hickory Creek Units during spring and fall migrations (NPS 2005).

White-faced Ibis (*Plegadis chihi*): The white-faced ibis (state threatened) is predominately a coastal species that inhabits a wide variety of freshwater and estuarine environments. The south Texas coast appears to be the northern limit of the ibis's breeding range. This species is considered a rare transient in the eastern third of Texas during spring and fall migration, and could be found in the Preserve. To date, no sightings of white-faced ibis in the Preserve have been documented (NPS 2005)."

Affected Environment, Adjacent Communities, Page 50, Flooding, fifth paragraph, delete sentence: "Since Hurricane Rita, many of the communities adjacent to the LPI Corridor Unit claim they are experiencing flooding with less rainfall, and it takes floodwaters much longer to recede."

Affected Environment, Adjacent Communities, Page 50, Flooding, add a new paragraph before "According to the Beaumont Enterprise...":

"According to the National Weather Service, the flood stage for the Pine Island Bayou near Sour Lake is 25 feet above the gauge height. At 29 feet above the gauge, lowland flooding occurs, and water covers some roads in Bevil Oaks. At 31 feet, homes in and around the Bevil Oaks and Pinewood Estates communities begin to flood, and at 37.5 feet, widespread flooding would occur and numerous homes in Bevil Oaks could have three to four feet of water in them (NWS 2008). Since Hurricane Rita, waters at this gauging station (USGS 08041700 Pine Island Bayou near Sour Lake, TX) have exceeded the flood stage (25 feet) ten times and have exceeded 31 feet once on October 22, 2006. From the year 2000 until September 2005, the water level at this gauging station has exceeded the flood stage 18 times and has exceeded the 31-foot level once on June 10, 2001 (USGS 2008). Historically, the river levels at this gauge have exceeded the 31-foot stage 8 times since 1963 (NWS 2008)."

Environmental Consequences, Water Resources, Impacts of Alternative A, Cumulative Impacts, Page 67, first paragraph, first sentence: add "forestry operations" after "the Preserve,".

Environmental Consequences, Water Resources, Impacts of Alternative A, Cumulative Impacts, Page 67, first paragraph, fourth sentence replace with: "Long-term, local, adverse impacts to water quality would occur, as the vegetation along the banks is currently providing water quality benefits by slowing and filtering stormwater that flows into the bayou over the land surface, thereby reducing the amount of nutrients, sediment, and other pollutants that enter the water."

Environmental Consequences, Water Resources, Impacts of Alternative A, Cumulative Impacts, Page 67, first paragraph, add the following text after the fourth sentence: "Similar impacts to water quality could also occur from Hardin County's proposed debris removal project because the storm debris is most likely shading the water and producing some degree of local water temperature reduction. Excess nutrients and high water temperatures are two contributing factors to low dissolved oxygen levels in aquatic systems. Therefore, the removal of vegetative debris could result in increased nutrient levels and water temperatures in local streams, thereby exacerbating the existing dissolved oxygen issues in the bayou."

Environmental Consequences, Water Resources, Impacts of Alternative A, Cumulative Impacts, Page 67, second paragraph, second sentence: replace "subdivision" with "subdivisions".

Environmental Consequences, Water Resources, Impacts of Alternative A, Cumulative Impacts, Page 67, second paragraph, fourth sentence: add "and nutrients" after "sediments".

Environmental Consequences, Water Resources, Impacts of Alternative A, Cumulative Impacts, Page 67, second paragraph, sixth sentence: replace "This" with "All of the development activities mentioned above".

Environmental Consequences, Water Resources, Impacts of Alternative A, Cumulative Impacts, Page 67, second paragraph, add the following after the sixth sentence: "As previously mentioned, increased nutrient levels and rising water temperatures could compound the low dissolved oxygen levels occurring in the bayou."

Environmental Consequences, Water Resources, Impacts of Alternative B, Helicopters, Page 68, first paragraph, first sentence: delete "It is assumed that" and second sentence delete "assumed to be".

Environmental Consequences, Water Resources, Impacts of Alternative B, Impact Analysis of the Effects of Removal of Type II and III Debris and Foreign Debris, Page 69, first paragraph, add the following after the last sentence ending in "...albeit slightly": "The removal of the four woody debris collections would expose some areas of the bayou to additional sunlight, thus adversely affecting the temperature moderating benefits of the debris. Higher water temperatures are most likely a contributing factor to low dissolved oxygen levels observed in the bayou. However, the water quality impacts associated with water temperature changes caused by the removal of four relatively small debris collections would be negligible at most."

Environmental Consequences, Vegetation, Impacts of Alternative B, Helicopters, Page 78, third paragraph, first sentence: delete "It is assumed that" and second sentence: delete "assumed to be".

Environmental Consequences, Fish and Wildlife, Impacts of Alternative B, Helicopter, Page 86, first paragraph, third sentence replace with: "The potential for this would only occur in the immediate vicinity of the debris collections to be removed, which constitutes only a small portion of the bayou, and could be mitigated by conducting helicopter operations outside of the bird nesting season."

Environmental Consequences, Fish and Wildlife, Impacts of Alternative B, Helicopter, Page 86, first paragraph, fourth sentence delete "It is assumed that" and fifth sentence delete "assumed to be".

Environmental Consequences, Fish and Wildlife, Impacts of Alternative B, Conclusion, Page 87, first paragraph, third sentence replace with: "Overall, removing the large woody debris collections under this alternative while employing the mitigation measures indicated would result in short and long-term, minor adverse impacts."

Environmental Consequences, Species of Special Concern, Impacts of Alternative A, Page 90, first paragraph, first sentence replace with: "There are no federally listed species in the project area to be impacted, and the state-listed species that have the potential to occur there would not be impacted because no action would be taken to remove the approximately four Type II and Type III large woody debris collections."

Environmental Consequences, Species of Special Concern, Impacts of Alternative A, Cumulative Impacts, Page 91, first paragraph (beginning with "Hardin County's") replace with:

"Hardin County's proposal to remove all storm debris from waterways totaling approximately 12.4 miles could have short and long-term minor to moderate adverse impacts on species of special concern. The debris removal operations would temporarily disperse species from the vicinity of the operations and could potentially injure or kill timber rattlesnakes that like to seek refuge in debris piles and use logs as forage habitat. The removal of the all of the storm debris would also likely reduce invertebrate and fish populations in the waterways being cleaned (see cumulative impacts discussion under Fish and Wildlife), thereby reducing foraging habitat for species of special concern such as the alligator snapping turtle, the wood stork, and other avian species."

Environmental Consequences, Species of Special Concern, Impacts of Alternative A, Cumulative Impacts, Page 91, second paragraph, third sentence: replace with "the paddlefish and the wood stork" with "species of special concern".

Environmental Consequences, Species of Special Concern, Impacts of Alternative A, Cumulative Impacts, Page 91, second paragraph, last sentence after Rafinesque's big-eared bat: add "and other upland species of special concern".

Environmental Consequences, Species of Special Concern, Impacts of Alternative A, Cumulative Impacts, Page 91, third paragraph: replace "minor" with "minor to moderate" and replace "the wood stork, Rafinesque's big-eared bat and paddlefish" with "species of special concern in the region".

Environmental Consequences, Species of Special Concern, Impacts of Alternative A, Conclusion, Page 91, second sentence: replace "minor" with "minor to moderate".

Environmental Consequences, Species of Special Concern, Impacts of Alternative B, Helicopter, Page 91, first paragraph, first sentence: delete "the three" and Second sentence: replace "wood storks" with "avian species".

Environmental Consequences, Species of Special Concern, Impacts of Alternative B, Helicopter, Page 92, second paragraph, add the following sentence after the first sentence: "The alligator snapping turtle may also occur in the project waters."

Environmental Consequences, Species of Special Concern, Impacts of Alternative B, Helicopter, Page 92, second paragraph, third sentence replace with "These species are highly mobile, and noise from ground personnel and the helicopter would likely disperse them from the immediate vicinity of the woody debris collections."

Environmental Consequences, Species of Special Concern, Impacts of Alternative B, Helicopter, Page 92, add the following paragraph after the sentence ending in "...resuspended due to removing the debris.":

"Though unlikely, removing the woody debris collections could injure or kill a timber rattlesnake. While the snake has not been documented in the LPI Corridor Unit of the Preserve, logs and branches associated with the Type II and III debris collections that extend onto the river bank provide the type of habitat where timber rattlesnakes may be found. Rattlesnakes often use downed logs as forage habitat, lying in wait next to a log for a small mammal to use it as a runway, and will also use stumps, logs and branches for refuge. When potentially threatened, timber rattlesnakes prefer to remain silent and, if possible, will hide before revealing their position (TPWD 2007). Because of this, if a timber rattlesnake is amongst a woody debris collection that is going to be removed, it is not likely to move away from the location due to the presence of workers or noise from machinery. Potential injury or killing of a timber rattlesnake would be mitigated by performing a survey of the woody debris collection and the immediate surrounding area prior to commencing removal activities. If a snake is found, the debris removal would be postponed pending coordination with the Texas Parks and Wildlife Department to avoid impacts to the species."

Environmental Consequences, Species of Special Concern, Impacts of Alternative B, Cumulative Impacts, Page 93, second and third sentences: replace "minor" with "minor to moderate".

Environmental Consequences, Species of Special Concern, Impacts of Alternative B, Conclusion, Page 93, first sentence replace with: "Removing the approximately four Type II and Type III large woody debris collections from the bayou under this alternative would create noise and physical disturbances that would adversely impact species of special concern. However, by employing the mitigation measures indicated, these, along with any other potential impacts would only be short-term and negligible."

Environmental Consequences, Species of Special Concern, Impacts of Alternative B, Conclusion, Page 93, second sentence: replace "minor" with "minor to moderate".

Environmental Consequences, Species of Special Concern, Impacts of Alternative C, Overland Routes, Page 93, second sentence: delete "the three".

Environmental Consequences, Species of Special Concern, Impacts of Alternative C, Overland Routes, Page 93, third sentence: replace "wood storks" with "avian species of concern".

Environmental Consequences, Species of Special Concern, Impacts of Alternative C, Overland Routes, Page 93, third paragraph replace with "Impacts to paddlefish and alligator snapping turtles would be similar to those under Alternative B and would likely entail temporary dispersion of any fish or turtles in the vicinity of the woody debris."

Environmental Consequences, Species of Special Concern, Impacts of Alternative C, Overland Routes, Page 93, add the following fourth paragraph after the sentence ending "...vicinity of woody debris.":

"Impacts to timber rattlesnakes would be similar to those under Alternative B. Likewise, adverse impacts could be mitigated/avoided by conducting a survey of the woody debris and areas immediately surrounding the debris for timber rattlesnakes prior to commencing removal activities and consulting with the Texas Parks and Wildlife Department if a snake is found."

Environmental Consequences, Species of Special Concern, Impacts of Alternative C, Boat, Page 93-94, delete the second paragraph.

Environmental Consequences, Species of Special Concern, Impacts of Alternative C, Cumulative Impacts, Page 94, second and third sentences: replace "minor" with "minor to moderate".

Environmental Consequences, Species of Special Concern, Impacts of Alternative C, Conclusion, Page 94, first sentence: add "and physical" after "noise" and delete "the three".

Environmental Consequences, Species of Special Concern, Impacts of Alternative C, Conclusion, Page 94, third sentence: replace "minor" with "minor to moderate".

Environmental Consequences, Adjacent Communities, Cumulative Impacts, Page 109, first paragraph, add the citation: (U.S. Census 2000).

References, Page 110, add reference after Bragg, D. and J. Kershner:

Center for Reptile and Amphibian Conservation and Management (CPACM)

2003 "Timber Rattlesnake (*Crotalus horridus*) Identification, Status, Ecology, and Conservation in the Midwest." Available at
<http://herpcenter.ipfw.edu/outreach/accounts/reptiles/snakes/Timber_Rattlesnake/TimberRattlerFactSheet.pdf>.

References, Page 112, add reference under National Weather Service heading:

- 2008 Advance Hydrologic Prediction Service. Accessed at <http://ahps.srh.noaa.gov/ahps2/hydrograph.php?wfo=lch&gage=solt2> on June 30, 2008.

References, Page 112, add reference after STATS Indiana:

Texas Parks and Wildlife Department (TPWD).

- 2007 "Timber Rattlesnake (*Crotalus horridus*).\" Available at <http://www.tpwd.state.tx.us/huntwild/wild/species/timberrattlesnake/>.

References, Page 113, Add reference under U.S. Geological Survey (USGS) heading:

- 2008 Peak Streamflow for the Nation: USGS 08041700 Pine Island Bayou nr Sour Lake, TX. Accessed at http://nwis.waterdata.usgs.gov/nwis/peak?site_no=08041700&agency_cd=USGS&format=html on June 30, 2008.

References, Page 113, add reference under Personal Communications heading:

NPS

- 2008 Personal communication between Regional Aviation Manager (NPS) and Fulton Jeansonne (Big Thicket National Preserve) regarding information received from Columbia Helicopters outlining mitigation measures that reduce potential hazards from helicopter operations to acceptable levels. January 15, 2008.

References, Page 113, Hanna 2008 reference: replace Chris Peapenburg with Dusty Pate.

References, Page 114, add reference after Peapenburg, M.:

SESCO

- 2008 Personal communication between Kasey Pearson (Louis Berger Group) and James Skinner (Skinner Engineering Services Co. (SESCO)) regarding Hardin County debris removal activities. July 8, 2008.

Substantive Comments

The following table includes substantive comments that were received during public review of the EA and NPS responses to these comments. The substantive comments are presented as either direct excerpts (representative quotes) from the original comments or as text that has been paraphrased from the original comments. The comments and responses are organized according to the chapter to which they refer in the EA, and then further organized by comment identification number. A superscript number (¹) has been added to those comments and responses with multiple parts to tie the comment to the appropriate response.

Comment ID #	Representative Quotes	Responses
Purpose and Need		
1	There is no economically feasible way to provide flood control for these areas. BTNP should not have to pay, via ecologically damaging actions, to try to resolve a part of a perceived problem caused in most part by people who willingly put themselves at personal risk by living in the 100 year floodplain.	As indicated on page 5 of the EA, the purpose of this project is to address Hurricane Rita related large woody debris and other accumulations of foreign debris (e.g., building materials and appliances) in portions of the LPI Corridor Unit with the potential to collect further debris and create obstructions that could contribute to out-of-bank flows or atypical flooding beyond what currently exists. The purpose is not to provide flood control. The project objectives further address the goals of the project to allow weather-related processes to recover as naturally as possible and to prevent impairment of Preserve resources.

Comment ID #	Representative Quotes	Responses
2	All kinds of Federal representatives, Corps of Engineers, NRCS, etc., have visited this area and said that it is obvious that unless the stream channel of the Little Pine Island Bayou is cleaned out, Pinewood will experience catastrophic flooding. This was before Hurricane Rita. Now, with the added load of hurricane debris, the situation has only worsened.	NPS could not locate the sources of information referenced in the comment without further information. As indicated on page 50 of the EA, in 1985 the U.S. Army Corps of Engineers conducted a feasibility study on flood damage prevention for the Pine Island Bayou Watershed and determined that there was no economically feasible nonstructural or structural means of reducing existing flood damage.
3	Page 5., Need: I believe the park has dramatically overstated the need [for the project]. In the recommendations section of the Reconnaissance Trip Report, March 2007, it is stated "Woody debris collections may become problematic if they accumulate to a great enough height and lateral extent that they substantially affect out-of-channel flows and potentially increase upstream flood stages. During our site visit, we did not observe any such obstructions, nor did we identify any woody debris collections that would obviously become such obstructions." There was clearly the view of the hydrologists on that trip that the likelihood of any complete obstructions forming even in the near distant future is very very low.	The need for the project is based, in part, on the findings of trip report referenced in the comment, in which the NPS hydrologists also noted Type III woody debris collections as "potentially causing the greatest obstruction to high flows and, consequently, more likely to affect upstream flood elevations" and noted that one Type III collection found could possibly create a complete blockage of the active channel and result in substantial increases in flood stage. The NPS hydrologists recommended that cutting and redistributing the more "structural" logs would reduce the potential for obstructing flows. The report also noted that the Type II collections encountered "could also develop into substantial flow obstructions by collecting more debris over time" and stated that "breaching these potential barriers...could be beneficial in reducing this potential.
4	[According to Section 1.6 of NPS Management Policies] NPS must interact with the local governments and communities so that their flood control problems do not negatively impact BTNP. The proposal does not accomplish this requirement.	Section 1.6 of <i>NPS Management Policies 2006</i> recognizes that "ecological processes cross park boundaries...[and that] activities proposed for adjacent lands may significantly affect park programs, resources, and values. Conversely, NPS activities may have impacts outside park boundaries. Recognizing that parks are integral parts of larger regional environments, and to support its primary concern of protecting park resources and values, NPS will work cooperatively with others to: (1) anticipate, avoid, and resolve potential conflicts; (2) protect park resources and values; (3) provide for visitor enjoyment; and (4) address mutual interest in the quality of life of community residents, including matters such as compatible economic development and resource and environmental protection." NPS maintains that the Preferred Alternative best meets the policies outlined in Section 1.6 of <i>NPS Management Policies 2006</i> by providing a balance among all four of these aspects including working cooperatively with the community to address potential conflict and quality of life concerns regarding the flooding issue; protecting Preserve resources and values by maintaining the ecological integrity of the bayou; and improving visitor enjoyment by cleaning out foreign debris and making the bayou more accessible to watercraft.
5	Impairment will occur to BTNP resources because the proposals will interfere with stream ecosystems and geo-morphological processes as well as destroy and damage natural ecological processes and wildlife habitat.	An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the Preserve; or key to the natural or cultural integrity of the Preserve or to opportunities for enjoyment of the Preserve; or identified in the Preserve's general management plan or other relevant NPS planning documents as being of significance. This one-time removal of debris from the bayou does not constitute impairment as the effects of this project are less than major (significant), and Preserve resources and values will continue to exist in a condition that is consistent with the purposes of the Preserve as established in the Preserve's enabling legislation.

Comment ID #	Representative Quotes	Responses
6	As the NPS Hydrologists determined that Hurricane Rita did not create any Large-Woody-Debris [LWD] collections in the waterway, expanding the definition to include all naturally fallen trees and foreign debris does not reflect the intent of congress in providing funds for Hurricane Rita Disaster Recovery ¹ . Additionally, using the term 'debris' for naturally occurring woody material implies that it is worthless or even detrimental. Using a judgmental term predisposes the decision toward a 'clean-up' ²	In 2005, Hurricane Rita caused a widespread blowdown of standing timber within the Little Pine Island Corridor Unit. During a 2007 reconnaissance trip, NPS hydrologists found a few areas where large woody debris could possibly collect further debris and create obstructions with the potential to contribute to out-of-bank flows or atypical flooding. NPS understands that these debris accumulations could be the result of the timber blowdown from Hurricane Rita, and used its best professional judgment in designing this project to focus on large trees that have apparently fallen due to wind and could contribute to further obstruction in the bayou ¹ . The term 'woody debris' is used as a standard descriptor in the fields of hydrology and forestry for dead wood. Woody debris is described throughout the EA as a naturally occurring material, as opposed to foreign debris, with includes man-made materials. NPS understands that woody debris is an important feature in the bayou ecosystem and the term is not intended to imply that all woody debris needs to be cleaned-up. ²
7	Pages 10 through 12, the Sierra Club submitted many scientific documents that show that removal of debris piles is not ecologically sound. Our comments were ignored. NPS does not discuss scientifically the soundness of this proposal and what the current scientific literature says about streams and coarse woody debris and does not discuss the information that the Sierra Club submitted. Scientifically, this proposal is not defensible.	NPS received and considered the scoping comments and associated references from the Sierra Club. As stated in the response to comment #6, NPS understands that woody debris is an important feature in the bayou ecosystem. This information was not overlooked when developing the purpose and need for the project which is intended to be a balance of addressing community interests and safety, improving visitor use and experience, and minimizing impacts to Preserve resources.
8	Page 11, General Management Plan, NPS states that the proposal is "consistent with the General Management Plan". This is not true. NPS states that the proposal does not "affect the unique mixture of temperate and subtropical botanical communities". Coarse woody debris is a critical part of "temperate and subtropical botanical communities" and provides important ecological residuals for these communities and helps make them more diverse and productive.	On pages 78-82 of the EA, the analysis of alternatives indicates, "Because the natural processes that shape these plant communities in the project area would not be noticeably altered under this alternative, there would be no change in the influences on the structure, distribution, and diversity of these plant communities, and continued flooding under alternative B would have long-term, local, negligible beneficial effects on vegetation." Therefore, NPS maintains that the proposed action is consistent with the General Management Plan.
9	Page 11, Fire Management Plan: The fact that NPS has to use a Fire Management Plan that says that aircraft will be considered to try and justify the use of aircraft in this situation is very troubling. That references an "aggressive suppression" that will have an imminent threat to homes or other property. Not to prevent some potential somewhere out in the future threat.	This section of the EA describes how the proposed action is consistent with the Fire Management Plan, and is intended to show, in comparison, other activities that are similar in nature to those in the proposal that are authorized within the same area of the Preserve.
10	"[Consistency with NPS Management Policies] Page 51, 4.6.4 Floodplains, states "Specifically the service will protect, preserve, and restore the natural resources and functions of floodplains...." By proposing the action the NPS specifically indirectly supports floodplain development and actions that could adversely affect the natural resources and functions of floodplains or increase flood risks in BTNP. Page 52, 4.6.6 Watershed and Stream Processes, states "The Service will manage watersheds as complete hydrologic systems and minimize human caused disturbance to the natural upland	The Preferred Alternative was designed to minimize adverse impacts to floodplains and natural processes, and mitigation measures will be implemented to further ensure that adverse effects are minimized as much as possible. In so doing, impacts to floodplains and the natural processes therein are expected to be long-term, local, negligible (that is, barely perceptible), and adverse; therefore, this action is not inconsistent with NPS <i>Management Policies 2006</i> . Taking action to eliminate a potential flooding hazard does not constitute endorsement of floodplain development.

Comment ID #	Representative Quotes	Responses
	processes that deliver water, sediment, and woody debris to streams..." NPS is not supposed to interfere with natural processes within BTNP..	
11	"[Page 8, Natural Phenomena and Floodplains] NPS states that "Landscapes disturbed by natural phenomena ... floods, hurricanes ... will be allowed to recover naturally unless manipulation is necessary to protect other park resources, developments, or employee and public safety". NPS is not doing this because there are no park resources, developments, or employees endangered by the debris piles, and as for public safety, NPS experts say there is no problem with floods as the debris piles exist.	In the March 2007 Trip Reconnaissance Report, NPS hydrologists observed a few areas where Type II and III large woody debris accumulations could possibly collect further debris and create obstructions with the potential to contribute to out-of-bank flows or atypical flooding beyond what currently exists; therefore, this project is designed, in part, to reduce this potential. Please also see the response to comment #1.
Alternatives		
12	I support removal of all types of debris (Types 1, 2, and 3) from the channel. Type 1 debris not only increases propensity for current flooding, but also has the potential to collect more debris and produce more blockages of the channel in the future.	As stated in the EA on page 24 under the "Alternatives Considered and Dismissed" heading, the NPS evaluated the alternative of removing all types of debris from the channel and dismissed it "because Type I debris could not be shown to create obstructions that could change the current potential for out-of-bank flows or atypical flooding beyond what currently exists." This option will therefore not meet the purpose and need of the project, which is to address potential future effects where large woody debris and accumulations of foreign debris could possibly collect further debris and create obstructions that could change the current potential for out-of-bank flows or atypical flooding beyond what currently exists.
13	Cutting downed woody materials will make them more likely to be transported, creating the situation you are trying to avoid. Allowing the material to breakup over time will reduce the amount carried by the streams during specific rain events. As woody material builds up around obstructions, the water pressure will break off limbs, tree trunks will be moved parallel to the bank or broken open. The bayou will remove 'obstructions' without human intervention. As the NPS Hydrologist did not find ANY impediments to water flow two years after Hurricane Rita passage, why should anything be done? The potential for 'log jams' is reduced as time passes.	In their trip report the NPS hydrologists described Type III woody debris collections as "potentially causing the greatest obstruction to high flows and, consequently, more likely to affect upstream flood elevations" and noted that the one Type III collection found could possibly create a complete blockage of the active channel and result in substantial increases in flood stage. The NPS hydrologists recommended that cutting and redistributing the more "structural" logs will reduce the potential for obstructing flows. The hydrologists also noted that the Type II collections encountered "could also develop into substantial flow obstructions by collecting more debris over time." and stated that "breaching these potential barriers...could be beneficial in reducing this potential." While Alternative C will break up the large woody debris and leave the material in place, NPS has selected Alternative B as the Preferred Alternative under which the debris will be removed from the channel and disposed of outside of the Preserve.
14	Page 23, Alternative B, Preferred Alternative: Alternative B is designed as the Preferred Alternative with one of the reasons being "and it will maintain the ecological integrity of the Bayou." This is directly contradictory to the information found in the rest of the document. It is the most environmentally damaging of all the alternatives. It will destroy fish and wildlife habitat and has the potential for harming threatened and endangered species. This does not maintain the ecological integrity of the bayou. Please explain how removing live vegetation, including mature cypress, as well as	As detailed in the Environmental Consequences chapter of the EA and summarized in Table 2, impacts associated with the Preferred Alternative on fish and wildlife and species of special concern are expected to be negligible to minor, the majority of which will also be short-term with the one-time removal of large woody debris and foreign debris. Therefore, NPS maintains that the Preferred Alternative will maintain the ecological integrity of the bayou.

Comment ID #	Representative Quotes	Responses
	valuable fish and wildlife habitat found in the brush piles maintains the ecological integrity?	
15	If some action is deemed necessary, a lower impact Alternative C - cut & leave that limits cutting to tree boles that span the channel using small boats and foot travel during low water periods should be considered.	The alternative presented by the commenter is essentially the same as Alternative C which is addressed in the EA. Alternative C limits the cutting of trees and debris accumulations to those that are big/long enough to span the channel (i.e., debris types II and III). It also includes the use of boats or barges of a size that would be able to access and navigate the waterway to assist with the debris removal effort. Overland access and the use of hand tools are also included. The only difference in the alternative presented by the commenter from Alternative C is to perform the work during low water periods. The reason Alternative C specifies that debris removal will occur during high water periods is to reduce environmental impact. Foot travel, particularly during low water periods, has greater environmental impact than a boat being used during a high water period. A boat can float on the water and have minimal impact to soils, streambanks, vegetation, and water quality, whereas foot travel would result in greater damage to these resources from trampling, hauling equipment, transporting debris, and making multiple trips. If a boat can be used during high water periods, then the need for foot travel is reduced, which minimizes the environmental impact to the bayou.
16	The cutting of standing mature trees (live) within the stream channel changes the action from a low impact, one-time action, to a more substantial alteration of the ecosystem being done for the convenience of boat traffic. ¹ This action could be reduced by using smaller boats ² , and restrict cutting of live vegetation to lower limbs. ³	NPS has clarified the text to state that standing mature trees, particularly cypress, would be avoided. Please see the Errata Sheet. ¹ The type of boat or barge selected will depend on the nature of the debris found during the field trip that will occur prior to implementation in which NPS professionals will identify debris that is eligible to be removed. ² Cutting of live vegetation, other than what is associated with debris types II and III, is not part of the Preferred Alternative. ³ Be assured that NPS is committed to minimizing the impact of this effort on the resource.
17	Page 80, Impacts of Alternative C, Overland Routes, NPS should also require that clothes be cleaned each day so that non-native invasive plant species seeds are not spread.	NPS indicates on page 27 of the EA that "personal equipment" should be cleaned/washed before entering/re-entering the Preserve. NPS has clarified this statement to include clothing. See the Errata Sheet.
18	NPS states "Because this would be a one-time debris removal project, the NPS would not conduct subsequent monitoring". If this is true then NPS's statements on pages 11 and 12, under General Management Plan and Resource Management Plan that "it would provide baseline data on flooding and the effects of LWD and foreign debris to contribute to out-of-ban flows or atypical flooding beyond what currently exists that could assist with future planning and management efforts" are untrue statements because there will be no monitoring and therefore no data will be collected.	Long-term monitoring is not part of the Preferred Alternative, as indicated on page 23 of the EA; however, while there is no strict research plan, NPS does hope to learn more about flooding and the effects of removing large woody and foreign debris from the bayou, which could benefit future planning and management efforts.
19	Several commenters suggested that the NPS consider a buyout of properties within the floodplain of Pine Island Bayou and its tributaries in the EA.	CEQ defines reasonable alternatives as those that are economically and technically feasible, and that show evidence of common sense. The suggested alternative for NPS to purchase residences in the floodplain of Pine Island Bayou is not a reasonable alternative because the NPS does not have the statutory authority to purchase lands outside of its authorized boundaries. In addition, even if the authority existed, the costs would be exorbitant, thereby making it

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		economically infeasible for NPS to implement.
20	This EA has failed to evaluate a full range of feasible alternatives. It does not evaluate the alternative of Removing Foreign Debris only. Instead this is stuck in the other alternatives as a way of having the other alternative providing some environmental benefit. This alternative has to be evaluated on its own merit.	An alternative to remove foreign debris only is out of the scope of this project. The purpose of this project is to address large woody debris collections associated with Hurricane Rita; however, NPS understands that foreign debris has accumulated in those deposits and is choosing to remove the foreign material associated with the large woody debris. This has been added to the EA. Please see the Errata Sheet.
21	Using heavy lift helicopters to remove a few trees from four locations can not pass a risk/ benefit analysis, as any change to flow rates will be minimal.	On January 15, 2008, the NPS Regional Aviation Manager completed an evaluation of debris removal utilizing a helicopter and indicated that hazards outlined can be mitigated to an acceptable level, thereby placing the benefit of the project above potential risks.
22	As a boat/barge would need at least 2-3 feet of water to navigate up the bayou, what method will be used to cut the trees and other vegetation at least that depth below the water surface? [Presumably] You will have some sort of tool working underwater in the bayou to remove this vegetation.	The types of equipment to be used for this action are described on page 23 of the EA under the description of Alternative B, which includes shallow draft vessels that can navigate in somewhat shallow water. In addition to the tools described under Alternative B, hand tools such as clippers and saws will be used to cut vegetation below the water line. A brief description of these hand tools has been added to the Errata Sheet.
23	[The EA] doesn't mention that no work should be done during the bird nesting period so as to avoid taking a nest, I suggest that this kind of time restriction be employed as mitigation to protect the declining populations of neotropical migratory birds ¹ . Killing birds or destroying nests is a violation of the Migratory Bird Treaty Act ² .	NPS has added a mitigation measure which states that debris removal activities would avoid the nesting period of species of special concern and neotropical migratory birds. Please see the Errata Sheet. ¹ The proposed action is not expected to take the lives of any migratory or other birds. With regard to the nests, the Migratory Bird Treaty Act states that nests in-use should not be taken. The added mitigation measure prevents any nests that are in-use to be taken because the proposed debris removal effort will avoid the nesting periods of migratory birds ² .
24	Page 52, Assumptions for Analysis: NPS fails to identify the locations debris would be removed from. You can not do a proper analysis that meets the NEPA requirements for on-the-ground implementation without identifying where you will actually be doing the work and then performing the assessment on that area. The debris piles have been there for almost two years, there is no reason for not being able to identify them for this EA.	The project area is a dynamic environment, and the debris within the bayou channel is constantly moving. Therefore, in the EA, NPS analyzed impacts based on the environmental conditions found during the March 2007 Reconnaissance Trip Report to provide a generalized view of the number and location of large woody accumulations in the project area. The number and location of actual large woody debris deposits to be removed will be determined by another field review prior to project implementation, and NPS staff will determine, at that time, the appropriate removal method.
25	NPS never identifies the location of the disposal site or evaluates it as part of the project.	Page 23 of the EA describes the location of the disposal site and how the disposal site will be used to accommodate the debris from the removal effort. Figure 2 on page 3 shows the location of the disposal site within the broader project area. The Environmental Consequences chapter of the EA evaluates the effects of removing the debris from the bayou and disposing of it at the disposal site.
26	NPS says nothing about the advantages of using its own personnel to do this, if needed, rather than hiring an expensive consultant to prepare this EA and a contractor with a helicopter and or boat and barge to do the work. The Sierra Club believes that if some removal of debris is needed that NPS personnel are the best to do this because they understand the importance of the National Park System and BTNP natural resources	NPS staff will be leading the pre-removal site visit to determine which accumulations, if any, of debris are to be removed. NPS staff do not have the expertise or equipment to perform this kind of debris removal work; however, an NPS employee will be present during the actual removal of debris from the bayou to help ensure that impacts are minimized to the greatest extent possible.

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	and will ensure protection of BTNP. It is their job to do so!	
27	BITH has never used helicopters as part of fire suppression activities. Other parks in the parks system are drafting plans to limit the amount of aircraft use in their parks, why is BITH making recommendations that will increase the use of aircraft within the park. This is inconsistent with what is happening throughout the park system.	Debris removal efforts may use a helicopter, if the information obtained from the pre-removal site visit indicates that a helicopter would be the most appropriate method and have the least impact to the resource. This is a one-time effort, and NPS does not consider it to be an expansion of its aviation, overflight, or aircraft operations at the Preserve or throughout the NPS.
28	Page 23, Remove Large Woody Debris and Foreign Debris from the Channel and Dispose of it Completely (Alternative B, Preferred Alternative), NPS states the LWD will be "disposed of outside of the Preserve". If the coarse woody debris is going to be broken up then it should be placed inside BTNP so that it can decay and provide organic matter and nutrients to soil (fertilizer) and provide wildlife habitat including food and shelter.	Leaving large woody debris that is broken up in the Preserve was considered in the EA as part of Alternative C, which was carried forward in the EA for further impact analysis. NPS did not choose this alternative, in part, so as to not increase debris accumulations downstream, which better addresses the project objective to resolve potential conflicts, enhance visitor use and experience, and address mutual interests in the quality of life of community residents.
29	Page 68, helicopter: This states that it is "assumed that the helicopter take off and landing sites are located in a previously disturbed area" and further that "the disposal site is assumed to be in a previously disturbed area with appropriate erosion and sedimentation controls." It is the NPS responsibility to get this information, not just assume that this is the case. This is a connected action under NEPA and has to be evaluated using accurate information.	NPS verified this information and removed the word "assumed" from the cited text. Please see the Errata Sheet.
Affected Environment		
30	[One] reason given for compatibility with the GMP is "it would provide baseline data on flooding and the effects of LWD and foreign debris to contribute to out-of-bank flows or atypical flooding beyond what currently exists that could assist with future planning and management efforts ..." This would imply...that the NPS knew what the current levels of flooding are...The EA does [not] mention flood elevations at various flow rates or flood probabilities.	This information is located on page 35 of the EA, which states, "The threshold of flood damages for both Pine Island and Little Pine Island Bayous is the 5-year flood which has been estimated at 8000 and 4000 cubic feet per second, respectively.
31	Page 50, Flooding: The information about the number of homes within the 100-year floodplain is 23 years old. This is not the best available data, and new information should be gathered for this EA. This information is critical to be able to tell the accurate number of individuals that are subject to flooding on a regular basis and could be affected by this project. ¹ This information does also not contain any pertinent information of flooding such as past and current hydrographs that detail actual flow conditions. ²	The exact number of homes or individuals currently in the floodplain is not relevant to the analysis of the environmental consequences of debris removal. The EA documents that flooding in communities adjacent to the project area has been, and remains, a concern. ¹ Information added to the Affected Environment chapter under the Adjacent Communities section on flood stage levels and recent flood events indicates flood stage levels have been exceeded 10 times since Hurricane Rita and were exceeded a total of 18 times from the period of 2000 to September 2005. This information includes current estimates of the water levels at which flooding begins in area communities, and when that flooding becomes widespread. Please see the Errata Sheet for more detailed information. ² NPS determined that no changes to the Environmental Consequences section of the EA were needed as a result of the updated information because the level of impact under

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		each alternative remained the same.
32	DO-12 Handbook page 23 states "Once alternatives and issues have been defined, the analysis area boundary should be delineated for each resource. The analysis boundary will be different for each resource." NPS fails to identify the analysis boundary anywhere in the affected environment section as directed in the DO-12 handbook. Nor does it set different boundaries for different resources.	The Affected Environment chapter of the EA inherently defines the analysis area boundaries for each resource topic carried forward into the Environmental Consequences chapter by describing the resources expected to experience environmental impacts. This chapter presents information about the current status of the resource areas carried forward for further analysis including such data as location, nature, condition, scope, and size to provide an accurate portrayal of resources that will be impacted by the proposal. Conversely, resources not expected to incur environmental impacts are not presented in this chapter. A generalized project area map is also included on page 3 of the EA.
Environmental Consequences		
33	Alligator Snapping Turtle and Canebrake Rattlesnake were not analyzed in this section. Both are state listed and likely to occur in the project area. ¹ According to local fisheries biologists, no paddlefish would likely occur in the project area. ² This analysis needs updated to take these species into account....The same goes for Bald Eagle, American Peregrine Falcon, Arctic Peregrine Falcon, White-Faced Ibis, and other species. ³	The analysis for Species of Special Concern has been updated to include the alligator snapping turtle and the canebrake rattlesnake, or timber rattlesnake, which, while not officially documented in the LPI Corridor Unit, have potential to occur there. ¹ Telemetry results from tagged paddlefish show that they frequent the lower end of Pine Island Bayou and the confluence with the Neches River (Klein et al. 1996). With the geographical scope of the project extending to U.S. Route 69, paddlefish could potentially occur within the eastern portion of the project area. ² The analysis has also been updated to include the American swallow-tailed kite, bald eagle, American peregrine falcon, Arctic peregrine falcon, and the white-faced ibis, all of which are migratory transients and may occur within the project area. ³ Please see the Errata Sheet.
34	Page 50, Flooding, NPS states "Since Hurricane Rita, many of the communities adjacent to the LPI Corridor Unit claim they are experiencing flooding with less rainfall and it takes floodwaters much longer to recede ¹ ." Since there have been the remnants of two hurricanes, a record breaking rainfall year in 2007, and more development of the LPI 100 floodplain, it would not be surprising if these comments are true. However, NPS presents no documentation that these comments are true and that BTNP is at fault. NPS's decision should be based on the best, sound, science and not assertions by people who are concerned that they have built in the 100 year floodplain... ²	NPS has replaced the referenced sentence with data from the nearest USGS gauging station (USGS 08041700 Pine Island Bayou near Sour Lake, TX). Please see the Errata Sheet. NPS is not relying on the claims of adjacent community members in making its decision on this project, but is responding to an inquiry made by a local county government to explore the possibility of removing Hurricane Rita debris from a portion of LPI. Based on this inquiry, NPS developed its own proposal to address Hurricane Rita and other debris in the bayou. The purpose and need for the project, as well as the project objectives, are based on the proposal that NPS developed. ²
35	Debris piles are valuable wildlife habitat and actually serve important ecological functions by slowing water down to drop out sediments to fertilize the 100 year floodplain and make it more productive and diverse. By slowing down flood waters debris piles spread water out and reduce its height. Debris piles reduce the impacts of flood flows downstream by reducing the velocity of flood flows. By removing debris piles not only will ecological processes and wildlife habitat be altered but flood flows will be higher which will cause more erosion and possibly increase dangerous conditions for those living downstream.	It is true that substantial woody debris piles within a stream may slow flow velocity immediately upstream of the debris, but it is false that they "reduce its height." Debris jams actually can raise flood elevations in an upstream direction. In reference to affecting downstream velocity, the overall velocity profile of a given flow is controlled by the gradient of the channel, the configuration of the channel, boundary, roughness (such as woody debris), obstructions and other backwater effects (again, woody debris may fit in this category), and the height or elevation of the flow, which translates into an energy gradient. Considering all of these factors, removal of Type II and Type III woody material (most of which has no effect on in-channel flows) is extremely unlikely to affect the overall velocity of any given flow. In addition, a large amount of woody debris that currently exists within the channel will remain.

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36	<p>Fungi, lichens, and other micro-organisms (which are all apart of the unique mixture of temperate and subtropical botanical community) are much more numerous and diverse than the vascular plants that also make up the botanical community. Many of these species thrive and actually require dead and dying trees (large woody debris) to complete all or a part of their life cycle.</p>	<p>The NPS acknowledges that bacteria, fungi, lichens, non-vascular plants and other organisms are much more numerous and diverse than vascular plants in the ecological community within the project area and that many of these species require dead and dying trees to complete their life cycle. The NPS also acknowledges that many of these species are not well studied, and there is little to no information on them that is specific to southeast Texas or the Preserve. The NPS maintains that the amount of large woody debris to be removed under the Preferred Alternative will be negligible when compared to the amount of large woody debris which will be left along the banks and in the floodplain of the project area, in addition to large woody debris maintained in other portions of the Preserve.</p>
37	<p>Pages 56-57, Impacts of Alternative A No Action: What do "substantially", "accumulates to a great enough height or lateral extent", "potential of becoming a complete channel obstruction", "the potential to increase flood elevations", "the potential for the collections to become obstructions over time was recognized", "appreciable effect on flood elevation", "is not expected to change the current potential for out-of-bank flows or atypical flooding beyond what currently exists", "atypical flooding", "changes in backwater effects would also be minimal", "could create complete channel obstructions" mean in the context cited in the text and quantitatively? ¹ What is the probability, risk, potential, and likelihood of these events happening? ²</p> <p>Page 58, Conclusion, NPS states "it is not certain to occur, should the Type II or III LWD collections accumulate additional debris in the future, they could create complete channel obstructions ... with the proposed actions contributing only slightly to these impacts". What does "not certain to occur", "should the Type II or III LWD collections accumulate", "they could create complete channel obstructions", "with the proposed actions contributing only slightly to these impacts" mean in the context cited in the text and quantitatively? ¹ What is the probability, risk, potential, and likelihood of these events happening? ²</p> <p>Section 1502.22 of CEQ NEPA implementing regulations must be adhered to if quantification of impacts cannot be determined. ³</p> <p>Pages 30-33, Table 2, NPS continues to use words or phrases that are not defined quantitatively or are not defined at all including "negligible", "moderate", "slightly", "potential", "minor", "some polluting materials", "minimal effects", and "not contributing". ¹</p> <p>Page 30, Table 2, NPS states "any greater benefits would be difficult to predict given the uncertainty of the potential for these complete channel blockages to form". NPS does not state the risk, potential or likelihood of blockages being formed. The fact that NPS doesn't know the probability for future flooding, how high the</p>	<p>The EA in written in plain language that the general public can understand, per 40 CFR §1502.8 of the CEQ NEPA regulations. The words and phrases in question are intended to be understandable using standard dictionary definitions. These words and phrases are not technical terms that need further definition or clarification. With regards to the quantitative meaning of these words and phrases, NPS used its best professional judgment in defining the methodology for the impact analysis in the EA, which includes both quantitative and qualitative approaches. For the words and phrases in question here, NPS approached these definitions qualitatively, not quantitatively. ¹</p> <p>Due to the relatively gentle gradients and broad, low-relief floodplains associated with the LPIB watercourse, large swaths of land are subject to inundation from moderate to extreme rainstorm events. Accumulation of woody debris contained wholly in the channel may affect flow levels within the channel, but has little influence on out-of-bank flows. However, large accumulations of woody debris that extend well above the banks and continue some distance into the floodplain, may produce a backwater effect and raise the elevation of a given flood in the upstream direction for some distance. This essentially increases the upstream flood risk for as far as the backwater effect may extend. The actual increase in risk is impossible to quantify and depends not only on the configuration of the woody debris accumulation (height and lateral extent) but also on the permeability of the blockage, its position relative to topographic highs and lows and other features that may affect backwater such as the confluence with Big Pine Island Bayou. Nevertheless, we can reasonably conclude that a woody debris accumulation extensive enough to produce a backwater effect on the floodplain will indeed increase the risk, likelihood, and potential of flooding within the area of effect. ²</p> <p>The CEQ NEPA regulations at 40 CFR §1502.22 state, "When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking...For the purposes of this section, "reasonably foreseeable" includes impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason." NPS consulted with subject matter experts to develop the methodology for the impact analysis and for analyzing environmental consequences. These experts used the best available information and professional judgment to evaluate the</p>

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	<p>potential future flood elevations would be compared to today, if a flood occurred how much damage would occur (not occur as a result of the proposed project) nor has made any attempt to determine these questions shows that they have not done due diligence to perform a analysis that complies with NEPA.²</p> <p>Pages 31 and 33, Table 2, NPS states "due to the minimal effects of debris removal that would reduce future flood elevations by less than 1-foot, and may possibly be undetectable ... as the potential for flooding increase with the possibility that obstructions within the bayou could be formed if Type II and III debris is not removed from the Preserve. However, this currently is not occurring." In other words the NPS has no problem right now and does not know the potential, likelihood, or risk of the problem in the future.²</p> <p>Page 5, Need, NPS states "The project is needed to address potential future effects ... could possibly collect further debris ... could change the current potential for out-of-bank flows or atypical flooding beyond what currently exists". There are always things that "could" occur in the future. NPS has provided no documentation that these debris piles will cause "out-of-bank flows and atypical flooding" in the future. There is no evidence that this will occur. What is the risk, likelihood, potential?²</p> <p>Page 20, Geologic Resources, NPS must define what "significant topographic or geologic features" means. Page 20, Soundscapes, NPS must define what "any extended period of time" and "a few hours" means.¹</p> <p>Several comments request clarification of terms used in the definitions of intensity levels.¹</p> <p>Pages 97-102, Park Operations and Management</p> <ul style="list-style-type: none"> a. Negligible – "at low levels"; "would not have an appreciable effect" b. Minor – "would not have an appreciable effect"; "would be simple, likely successful" c. Moderate – "would be readily apparent"; "in a manner noticeable to the staff and public"; "would likely be successful" d. Major – "would be readily apparent"; "would result in substantial change"; "in a manner noticeable to staff and the public"; "would be extensive"; "success could not be guaranteed" <p>Pages 89-94, Species of Concern</p> <ul style="list-style-type: none"> a. Negligible "well within the range of natural fluctuations" b. Minor "few individuals"; "barely perceptible consequences"; "Sufficient habitat"; "maintain species viability"; "critical reproduction periods"; "would be simple and successful" c. Moderate "measurable effects on a relatively small percentage"; "measurable effects on the existing dynamics between multiple species"; "measurable effects on a relatively large habitat area"; "measurable effects on important habitat attributes"; "deviate from normal levels"; 	<p>impacts of the proposal and concluded that the Preferred Alternative would not result in significant adverse effects on the human environment. NPS experts are not aware of incomplete or unavailable information that would lead to a different finding.³</p>

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	<p>"remain indefinitely viable"; "some individuals"; "some negative impacts"; "could be extensive"; "would likely be successful"</p> <p>d. Major "drastic and permanent consequences"; "almost all available unique habitat"; "permanently altered from moral levels"; "would be at risk of extirpation"; "Frequent responses"; "some individuals"; "Extensive mitigation measures"; "success would not be guaranteed"</p> <p>Pages 76-82, Vegetation</p> <p>a. Negligible - "discernable alteration"</p> <p>b. Minor - "limited alteration"; "world be simple and successful"; Reclamation; "readily achievable"</p> <p>c. Moderate - "would cause alternation"; "could be extensive"; "would likely be successful"; "Reclamation"; "requires additional resources to accomplish goals"</p> <p>d. Major - "substantial alteration"; "Extensive migration measures"; "success would not be guaranteed"; Reclamation; "substantial efforts"</p> <p>Pages 71-76, Soils</p> <p>a. Negligible - "would be so slight"; "reclamation"</p> <p>b. Minor - "reclamation"; "would be simple and successful"</p> <p>c. Moderate - "reclamation"; "cold be extensive"; would likely be successful"</p> <p>d. Major - "lasting impact"; "reclamation"; "could not successfully be achieved"; "Extensive mitigation measures"; "success could not be guaranteed"</p> <p>Pages 94-97, Visitor Use and Experience</p> <p>a. Negligible - "be below or at the level of detection"</p> <p>b. Minor - "would be slight"; "Few visitors"; "little expectation"</p> <p>c. Moderate - "readily apparent"; Many visitors"; "extensive mitigation"</p> <p>d. Major - "readily apparent"; "important consequences"; "Most visitors"; "strong opinion"; "extensive migrating measures"</p> <p>Pages 102-106, Adjacent Communities</p> <p>a. Negligible - "would be at or below the level of detection"</p> <p>b. Minor - "would be small but detectable"; "would be slight"; "affect only a few adjacent landowners"; "would be simple and successful"</p> <p>c. Moderate - "would be readily apparent"; "would be limited"; "would affect more than a few landowners"; "study area"; "would likely succeed"</p> <p>d. Major - "would be readily apparent"; "would be substantial"; "extend beyond the political boundaries of the community"; "would affect the majority of landowners"; "study area"; "possibly beyond"; "Extensive mitigation measures"; "success would not be guaranteed"</p> <p>Pages 82-89, Fish and Wildlife</p> <p>a. Negligible - "range of natural fluctuations"</p> <p>b. Minor - "few individuals"; "barely perceptible consequences"; "critical reproduction periods";</p>	

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	<p>"would be simple and successful"</p> <p>c. Moderate - "measurable effects on relatively small percentage of the population"; measurable effects on the existing dynamics between multiple species"; measurable effects on a relatively large habitat area"; measurable effects on "important habitat attributes"; "might deviate from normal levels"; "would remain indefinitely viable"; "some negative impacts"; "Sufficient habitat"; "could be extensive"; "would likely be successful"</p> <p>d. Major - "drastic and permanent consequences"; "permanently altered form normal levels"; "would be at risk of extirpation"; "Frequent responses"; "some individuals"; "Extensive mitigation measures"; "success would not be guaranteed"</p> <p>Pages 56-61, Floodplains</p> <p>a. Negligible - "could result"; "not be of any measurable or perceptible consequence"</p> <p>b. Minor - "could result"; "would be of little consequence"; "minimal risk"; "few mitigation measures"</p> <p>c. Moderate - "would be measurable and consequential"; "could be extensive"; "would likely be successful"</p> <p>d. Major - Severely adverse"; substantially beneficial impacts"; extensive migration measures"; "success would not be guaranteed"</p> <p>Pages 61-66, Wetlands</p> <p>a. Negligible - "reclamation"</p> <p>b. Minor - "would be detectable but inconsequential"; "would be simple and successful"</p> <p>c. Moderate - "would be readily apparent"; "would only temporarily affect"; "would also be temporarily affected"; "would be extensive and likely successful"</p> <p>d. Major - "substantial alteration"; "would permanently change"; "Extensive migration measures"; "success would not be guaranteed"; "Reclamation"; "may not be attainable"</p> <p>Pages 66-71, Water Resources</p> <p>a. Negligible - "so slight"; "not be of any measurable or perceptible consequence"; "would be consistent with"; "historical or baseline conditions"</p> <p>b. Minor - "expected to be small"; "of little consequence"; "would be consistent"; "would be simple and successful"; historical or baseline conditions"</p> <p>c. Moderate - "would be readily detectable"; "historical or baseline water quality or flow characteristics"; "could be extensive"; "would likely be successful"</p> <p>d. Major - "would have substantial consequences on a regional scale"; "historical or baseline water quality and stream flow conditions"; "over a large area"; "Extensive mitigation measures"; "success would not be guaranteed"</p>	
38	Continued development [in Hardin County] will increase water flow into the bayou. If it was	See page 69 of the EA: "The 1985 U.S. Army Corps of Engineers flood damage feasibility study estimated that

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	<p>possible to push the water downstream faster, doesn't this create more flooding in Rosehill Acres and east of the US69 Bridge? This would also reduce flows through Boggy Creek and Village Slough which will create additional flooding in Lumberton [and Bevil Oaks].</p>	<p>complete clearing of some reaches of Little Pine Island and Pine Island Bayous will cause water to move faster through the system. Although alternative B will result in the removal of eligible large woody debris and foreign debris collections, there will be no removal of vegetation outside of the channel in the floodplain, as described in the U.S. Army Corps of Engineers feasibility study. Therefore, when compared to alternatives to clear portions of both Pine Island and Little Pine Island Bayous, and when taking into account the substantial backwater effects created by the confluence of Little Pine Island and Pine Island Bayous, alternative B will result in much smaller, possibly undetectable changes in stream flow."</p> <p>The removal of targeted woody debris will have only negligible effects on stream flow and should not create flooding in other downstream areas. In addition, a large amount of woody debris that currently exists within the channel will remain.</p>
39	<p>Page 85-86, Helicopter: States that if small boats are used, propwash will cause slight increase in turbidity levels. How much increase will there be? How does that compare to state established standards for turbidity? These impacts need to be quantified and analyzed against established standards. How does the decision maker know or not whether this impact will result in a water quality standard if this type information is not presented?</p>	<p>In this section, NPS experts used a qualitative approach to describe the increase in turbidity levels, which is a valid approach accepted by the Council on Environmental Quality for use in environmental analyses in compliance with NEPA when a quantitative approach is not reasonable, feasible, or necessary. As this statement occurs as part of the Fish and Wildlife Section in the EA, further analysis or quantification of impacts to water quality were not needed to analyze impacts to fish and wildlife.</p>
40	<p>How many and what species of trees will be damaged?¹</p> <p>What steps will be taken to keep debris from spinning and damaging more trees as it is being lifted through the canopy?²</p> <p>When it states that disturbances will recovery fairly quickly, how long (months/years) will it take to fully recover?³</p> <p>As many of these debris piles have large logs that extend on to the overbank, why isn't the effects of removing the logs that have a portion on the bank that when shifted will most likely destroy understory vegetation (shifting of the logs when being lifted) in the process of removal. Understory is a vital component of these ecosystems.⁴</p>	<p>A final determination of the number and types of debris accumulations will be made by NPS staff prior to commencing activities. Staff will also determine at the time of removal which method of removal will be used. Since each removal method has different impacts, the total number of trees and which species of tree will be damaged is not known at this time (for example, standing trees in the channel will not need to be cut if a boat/barge is not used).¹</p> <p>Damage to trees/canopy branches from rotorwash and the potential for loads to become snagged has been acknowledged as a potential impact if the helicopter is used. Based on intensity definitions in the EA, the effects of these impacts were considered negligible (that is, this would not cause discernible alteration to vegetation composition, abundance, and/or diversity). Per discussions with helicopter contractors, the spreading of the canopy from the rotorwash would mitigate the potential for snagging, which was considered in determining the intensity of the impact. Additionally, removal of debris with a grapple or sling, which would be the method used at Big Thicket National Preserve, would not impact the canopy or understory of the bayou due to spinning of the load. According to a helicopter contractor, unlike hoisting construction debris such as beams and concrete which have a tendency to spin when lifted, woody debris/logs naturally orient themselves and stabilize prior to hoisting (Columbia Helicopters 2008). A reference citing the discussions with a helicopter contractor has been included in the Errata Sheet.²</p> <p>NPS cannot provide an exact length of time for the disturbances to recover because there are many variables that affect vegetative recovery such as rainfall, season, extent of disturbance, and visitor use. The environment of the bayou, however, does typically allow for a shorter recovery than that of a more arid environment.³</p> <p>Logs will be cut off at the root ball with the rest of the log cut</p>

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		into manageable sizes. Only those portions of the trees spanning the channel will be removed. Therefore, damage to understory on the banks would be due to the ground crews, which is analyzed in the EA. ⁴
41	<p>Page 67, Impacts of Alternative A No Action, NPS states "Because foreign debris would not be removed, any polluting materials in the project area would continue to affect water quality".</p> <p>Page 70, Impact Analysis of the Effects of Eliminating the Integrity of Type II and III Debris and Removing Foreign Debris, NPS states "Because foreign debris would be removed, some polluting materials in the project area would also be removed, which would help improve water quality, albeit slight". [In these statements,] What polluting materials are being referred to? ¹ What does "any polluting materials in the project area would continue to affect water quality" and "some polluting materials in the project area would also be removed, which would help improve water quality, albeit slight continue to affect water quality" mean in the context cited in the text and quantitatively? ²</p>	The polluting materials in these statements refer to foreign debris such as building materials or manufactured items, which are described in the EA on page 22. ¹ For the remaining questions, please see the response to comment #37. ²
42	<p>Page 80, Impacts of Alternative B (Preferred Alternative), Impact Analysis of the Effects of Removal of Type II and III Debris and Foreign Debris, Cumulative Impacts, NPS states "there would be no disposal impacts" is an untrue statement.¹ Any foreign debris removed which is placed in landfills due to Alternatives B and C has the potential to generate pollutants that escape the landfill's liner and cause ground or surface water pollution.²</p>	The cited text is taken out of context. It is part of the vegetation impact analysis for Alternative C, and refers to the fact that there would be no impacts to vegetation from disposal activities because the woody debris under this alternative would be left in the bayou, not removed and hauled to an off-site disposal location. ¹ As stated in the EA on page 79, hauling the debris to a disposal facility under Alternative B would not directly affect vegetation because hauling and disposal activities would occur in previously disturbed areas. The type of debris to be removed and hauled off-site to a disposal facility will be determined during the pre-removal site visit. ²
43	The Intensity Level Definitions found throughout the Environmental Consequences section are filled with vague and arbitrary definitions that are not clear as to when an impact would fit into a category. These definitions are contrary to the Bates Opinion against the NPS.	Please refer to the first part of the response to comment #37 (superscript 1). NPS experts used a qualitative approach to describe most impacts analyzed in the EA, which is a valid approach accepted by the Council on Environmental Quality for use in environmental analyses in compliance with NEPA when a quantitative approach is not reasonable, feasible, or necessary.
44	<p>Page 12, 1.4.7.1 Unacceptable Impacts. Removing or interfering with coarse woody debris accumulation and decay and the biological and ecological actions that are involved with this natural floodplain and stream function and process in BTNP is an unacceptable impact and must not be allowed.</p>	Based on the criteria for Unacceptable Impacts provided on pages 13 and 14 of the EA and the analysis of alternatives detailed in the Environmental Consequences section, impacts resulting from implementation of any of the alternatives presented in the EA would not result in any unacceptable impacts.
45	Neither alternative B or C should be implemented until a study of the hydrologic effect of removing these debris piles has been conducted to avoid any unintended consequences on downstream residents. A hydrologic model was constructed for the watershed by the Corps of Engineers when they did their feasibility study.	The EA analyzes the hydrologic effects of the proposed action and compares these effects to those found in the 1985 Flood Damage Prevention Feasibility Report conducted by the U.S. Army Corps of Engineers. Please refer to pages 59-60 for this analysis under Alternatives B and C.
46	Page 45-47, Species of Special Concern: USFWS has published a list of Birds of Special Concern in	NPS consulted with U.S. Fish and Wildlife Service and Texas Parks and Wildlife Department to determine the list of special

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	2002. These are bird species that have declining populations and will likely need listed on the threatened and endangered species list if action is not taken to conserve their numbers. Many of the species listed for the West Gulf Coastal Plain region are found within the LPIB-PIB corridor and would be affected by this project. As the preserve is designated as a Globally Important Bird Area, it is critical that the specific effects of the project alternatives are performed on these species.	status species, including bird species, analyzed in the EA. Page 7 of the Finding of No Significant Impact indicates the results of these consultations. The state-listed American swallow-tailed kite, bald eagle, peregrine falcon, and white-faced ibis have also been added to the EA as a result of public comment. Please see the Errata Sheet. For a discussion of the effects to non-special status bird species, please refer to the Fish and Wildlife section of the EA on page 82.
47	[The EA] states "Moderate effects on health and safety of preserve workers could be experienced as a result of helicopter use for addressing debris." [On page 13] unacceptable impacts are [defined as] impacts that, individually or cumulatively would: "create an unsafe or unhealthful environment for visitors or employees." This would show that this project (using a helicopter) would be an unacceptable use because it meets the criteria due to the health and safety risk it imposes on preserve personnel.	The method of debris removal will be determined following a field inspection prior to commencing removal activities. If a helicopter is deemed the most feasible tool for which to do that, the mitigation measures stated in the EA under Park Operations (page 27) would be used to minimize all human health and safety risks. To determine if this is an unacceptable impact, NPS applied the criteria of unacceptable impacts (see pages 13 and 14 of the EA) and concluded that because there are no major (significant) adverse effects to human health and safety, this would not be an unacceptable impact.
48	Page 19, Impact Topics Dismissed from further analysis, Socioeconomics: This topic is also meant to capture the cost to the government for performing the proposed action. Since both BITH money and resource will be used as well as federal grant money from HUD (through the county) this topic needs to be evaluated ¹ . Is the NPS going to do a cost benefit analysis on this project? ²	The cost of the debris removal effort incurred by NPS would be nominal, as stated in the second paragraph on page 15 of the EA. The cost to the NPS in terms of employee time is examined in the Park Operations and Management section of the EA on pages 97-102 ¹ . Per Section 1502.23 of the CEQ-NEPA regulations, a detailed cost-benefit analysis is not necessary if it does not aid the decisionmaker when there are other important qualitative considerations. Therefore, a cost-benefit analysis will not be performed because of other important qualitative considerations for this project including working cooperatively with the community to address potential conflict and quality of life concerns surrounding the flooding issue; protecting Preserve resources and values by maintaining the ecological integrity of the bayou; and improving visitor enjoyment by cleaning out foreign debris and making the bayou more accessible to watercraft. ²
49	Page 20, Impact Topics Dismissed from further analysis, Soundscapes: I can't see how NPS can justify dismissing this as an impact topic. Just because impacts may be of a short duration does not mean that they are not having a large impact. As an example: a jet flies over your head and breaks the sound barrier, the sonic boom tears your eardrum. The sound only lasted for a second; you now have permanent damage, is that not important since the sound only lasted a short period of time?	The rationale for dismissing soundscapes from further analysis was expanded in the EA to compare the L90 ambient sound levels of the Preserve at 36 to 39 decibels to that of a helicopter hovering overhead at 500 feet from 200 feet away (72 decibels) and a chainsaw at 110 decibels. The effect of this temporary increase in noise will depend on the location and number of sensitive receptors, which in this case, are wildlife, Preserve visitors and residents near the project area, in relation to the debris piles to be removed. Understanding that any noise generated from the helicopter and/or chainsaw would be temporary and adverse, the overall effect when comparing the decibel levels of these pieces of equipment to that of the background decibel level of the preserve would be negligible (at the lowest levels of detection, barely perceptible, and not measurable) to minor (measurable or perceptible, but it is slight, localized, and would result in a limited alteration or a limited area), and therefore, the topic of soundscapes has been dismissed from further analysis in the EA. Please see the Errata Sheet.
50	NPS has failed to take the "hard look" that Judge Bates stated it must do. Ultimately, the Sierra Club asks the question "Why are moderate	NEPA requires federal agencies to take a "hard look" at environmental consequences. In the EA, NPS took a "hard look" by considering the direct, indirect, and cumulative

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	<p>environmental impacts acceptable in the National Park System and in BTNP?"¹ NPS has stated in previous environmental documents (Comstock and Union EA redone due to the Sierra Club vs. Mainella lawsuit) that "The authorizing legislation directs the Secretary of the Interior to administer the lands within the Preserve "in a manner which will assure their natural and ecological integrity in perpetuity". How can moderate environmental impacts assure BTNP's natural ecological integrity in perpetuity? The NPS never explains this dichotomy in the EA.² Instead of protecting BTNP as a United Nations Education, Scientific, and Cultural Organization (UNESCO) Biosphere Reserve and as only the second unit in the entire National Park system to implement All Taxa Biodiversity Inventory (ATBI) the NPS proposes the reduction of biological diversity in BTNP by removing important ecological residuals, coarse woody debris, in the floodplains and channels of LPI.³</p>	<p>impacts of the proposed action on the environment, along with connected, cumulative and similar actions. Impacts were described in terms of context, duration, and timing using four impact intensity threshold definitions (negligible, minor, moderate, major), which are defined for each impact topic in the Environmental Consequences chapter. If the intensity of an impact could be described quantitatively, the numerical data was presented, otherwise, the impacts were described qualitatively.¹</p> <p>Removal of Type II and Type III woody material, most of which is well above the average level of flow, does not constitute "reduction of biological diversity in BTNP." On a percentage basis, the amount of material proposed for removal is negligibly small relative to the total available for support of ecological processes. In addition, a large amount of woody debris that currently exists within the channel will remain.²</p> <p>In this EA, major impacts are synonymous with significant impacts, which is a typical methodology used in NPS environmental documents. There are no major (significant) effects resulting from this proposal, and the only moderate impacts from this proposal are to park operations, which is not a "resource" for which the Preserve was established per its authorizing legislation. With no major effects and only one impact topic (park operations) having moderate effects, all other impacts resulting from this proposal are negligible or minor. Therefore, this proposal will only have negligible to minor effects to the resources for which the Preserve was established, and is not inconsistent with the enabling legislation of the Preserve. For these same reasons, this proposal is not inconsistent with nor diminishes the qualities for which the Preserve is listed as a UNESCO Biosphere Reserve or as part of the All Taxa Biodiversity Inventory.³</p>
51	<p>NPS states "No major effects are anticipated as a result of this project" but is virtually silent about the precedent this sets for the National Park System. By removing debris NPS encourages developers to continue floodplain development by setting a precedence of conducting flood control actions in BTNP.</p>	<p>Per 40 CFR 1508.27 of the CEQ NEPA regulations, federal agencies must consider the intensity of environmental impacts resulting from a proposal, including "The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration." See page 6 of this FONSI under the heading matching the quoted text above.</p>
52	<p>Page 53, Assumptions for Analysis, NPS states "If more than one method is ultimately implemented, the impacts would be a combination of those described below." If more than one method is used then NPS must call each of these combination alternatives an alternative and give such alternatives the complete analysis that is given single method alternatives so Section 1502.14 of CEQ NEPA implementing regulations is appropriately applied. Section 1502.14 states that the EA "should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision-maker and the public".</p>	<p>The Environmental Consequences chapter of the EA evaluates the environmental impacts of each of the methods to be employed during the debris removal effort. The Preferred Alternative is a "toolbox" of various methods that could be employed, depending upon the conditions revealed during the site visit that will precede the removal efforts for the purpose of determining the number, locations, and types of debris accumulations to be removed. The impact analysis in the EA is based on the reconnaissance trip in March 2007, which identified four debris accumulations, and is the most accurate and up-to-date portrayal of what can be expected to be found during the pre-removal site visit. The EA analyzes impacts from each of the methods in the alternative "toolbox" to provide a picture of the types of impacts that can be expected once the pre-removal site visit happens. The actual methods to be employed will depend on what is found during the pre-removal site visit, so the EA indicates that the impacts would be a combination of whatever methods are chosen to best remove the debris. This type of analysis meets the intent of Section 1502.14 of the CEQ NEPA regulations to "rigorously explore and objectively evaluate all reasonable alternatives". Environmental impacts in the EA are evaluated clearly and comparatively for the decision maker and the public.</p>

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53	<p>"[Page 99 Park Operations] Impacts sections for alternatives B and C: Each of these sections state "The county would handle all coordination with and costs of the project & contractor." Then later on in each of these sections it goes on to state "This could temporarily increase work loads of maintenance, resource management, interpretation/education, administration, and other resource and visitor protection staff from the need to coordinate with the county and its contractor." This is double speaking and misleading, either the county will handle all coordination with the contractor or it will not. You need to be forthright and disclose the true and potential effect of this project on actual staff time and equipment¹. The use of helicopters would have a potentially moderate adverse impact of the health and safety of employees. Is a moderate adverse impact to preserve employees an acceptable impact?²</p>	<p>The cited text is only a partial excerpt from the EA. The full sentence in the EA reads, "The county would handle all coordination with and costs for the [helicopter/boat or barge/overland] contractor, but the NPS would provide input to ensure protection of resources and visitors during removal operations." Taking the full statement into consideration, the county will coordinate and fund the debris removal contractor and NPS staff will conduct a pre-removal survey and monitor the contractor during the removal of the debris; therefore, county employees and NPS employees will both be spending time on this project. NPS equipment will not be used to remove the debris.¹ Please see the response to comment #44 regarding unacceptable impacts.²</p>
54	<p>Cumulative Impact sections for each of the alternatives on species of special concern: The cumulative impacts section does not evaluate either Hardin Counties subdivision proposal or the debris/vegetation removal project, or the many clear-cut logging operations on their impact to Rafinesque's big-eared bat. All of these projects have the potential for adversely affecting this bat species.</p>	<p>The cumulative impact evaluation of the subdivision proposal, Hardin County's debris removal actions, and clear-cut logging on species of special concern are discussed on page 91 under Alternative A. The cumulative impacts analysis for Alternatives B and C refer back to the discussion under Alternative A.</p>
55	<p>Page 92, Boat/Barge: This section states "cutting down standing trees within the channel to provide a 10-foot clearance for boat/barge could potentially kill a Rafinesque's big-eared bat if it is roosting in the tree. Adverse impacts of this nature could be mitigated by conducting a bat survey of the tree prior to cutting it down." How is potentially killing a listed species consistent with management policies or any other policy or regulation that guides the operation of the park? The fact is that is directly contradictory to all of those. What does "could be mitigated" mean? How accurate are surveys at finding bats in a roost tree if they exist? What is the likelihood of not finding a bat in the tree when they are there then ultimately killing it? This is an unacceptable impact.</p>	<p>The cutting of live trees will be limited to only the amount necessary to accomplish the project and standing mature trees, particularly cypress, will be avoided. Where a tree needs to be cut, surveying the tree for bats roosting in large hollows or behind loose bark is considered a mitigation measure that greatly reduces the likelihood of "taking" a listed species. In the event that at survey misses a bat and it is accidentally killed, this is considered an "incidental take" and is not considered a major impact by the intensity level definitions for Species of Special Concern listed on pages 89 and 90 of the EA.</p>
56	<p>Visitor Use and Experience: This whole section lacks any information about visitor use. How many visitors use the project area each year? How many canoe/kayak trips in the bayou are taken each year? What type of visitors use this area (hikers, boaters, researchers, etc.)? Which of those is the predominant user of the area? Without this very rudimentary data how can you analyze the impact of the alternatives on visitor use and experience?</p>	<p>The EA provides a qualitative analysis of visitor use and experience based on what types of use occur in the project area. It is not intended to quantify the current or future numbers of visitors, but rather illustrate the overall long-term benefit to visitors (and water users in particular) when compared to the temporary adverse effects that short-term closures and increased noise will have.</p>
57	<p>Page 58, Impacts of Alternative B (Preferred Alternative), Helicopter, NPS states "The act of removing this debris by helicopter would have no impacts on the function of the floodplain as this</p>	<p>The cited text refers to direct impacts that these particular removal methods (helicopter, boat/barge, ground crew) would have on floodplains, particularly floodplain function. The text is intended to mean that these methods will be "light on the</p>

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	<p>method would not involve any permanent land disturbance or alternation of topography in the floodplain." Page 59, Impacts of Alternative B (Preferred Alternative), Boat/Barge, NPS states "removing this debris by boat and barge would have no impacts on the function of the floodplain as this method would not involve any permanent land disturbance or alternation of topography in the floodplain. Page 60, Impacts of Alternative C, NPS states "by a ground crew equipped with saws would have no impacts on the function of the floodplain as this method would not involve any permanent land disturbance or alternation of topography in the floodplain." These statements are] not true since the move of the coarse woody debris will allow flow and velocity to increase with higher levels of soil movement in LPI. So as a direct and indirect result of the helicopter, boat/barge, and ground crew, morphological changes to LPI will occur.</p>	<p>land" and therefore not result in any permanent scarring or disturbance that would change the floodplain function. An analysis of floodplain function related to removing the debris can be found on page 59 of the EA in the section entitled "Impact Analysis of the Effects of Removal of Type II and III Debris and Foreign Debris.</p>
58	<p>Page 77, Impacts of Alternative A – No Action, Cumulative Impacts, NPS should state conclusively that there will be an increase in non-native invasive species due to the bank clearing that Hardin County will do.</p>	<p>The second paragraph on page 77 of the EA states that any construction or maintenance activity that has or will cause ground disturbance has the potential to spread nonnative plants. This would include the Hardin County debris removal project cited in the comment, if ground disturbance were to occur as a result of this project. To clarify Hardin County's proposal, they intend to remove storm debris and grind it in place, using the mulch as ground cover (SESCO 2008).</p>
59	<p>Pages 57, 58, and 64, Cumulative Impacts, the NPS does not state why stripping the banks 20 feet of vegetation on both sides of Boggy Creek and Paula Branch is a minor or moderate adverse impact since it will create conditions that will cause more erosion and sedimentation in LPI which will affect flood flows, velocity, volume, and the extent of flooding. So the likelihood of this action reducing flood problems is low and the likelihood of increase environmental impacts is high.</p>	<p>The cumulative effects to floodplains including flood elevations and stream flow velocity under Alternative A-No Action are described on page 57 of the EA in Cumulative Impacts.</p>
60	<p>Page 17, Adjacent Communities, NPS does not adequately address how much local communities downstream will be affected negatively by more flow faster downstream in this EA.</p>	<p>The text in this section is intended to provide a brief overview of the reasons why the topic of Adjacent Communities is carried forward. A more detailed analysis of the impacts related to this topic can be found in the Environmental Consequences chapter beginning on page 102. See also the response to comment #38.</p>
61	<p>"[Page 84] A 40% reduction in invertebrates would have drastic and permanent consequences for a wildlife species population, and would also the dynamics between multiple species. Once the invertebrate populations crash in these streams that Hardin County is destroying then the fish will most likely move into PIB and LPIB to compete with the fish there for food and cover. NPS is now proposing to destroy more habitat that will decrease the aquatic insects in LPIB. The cumulative effect of destroying that habitat when added to the other would create major impact on fish and wildlife and would result in an impairment and one that I would think would be unacceptable.</p>	<p>The cited statistic is from a report conducted for the Satilla River in Georgia, and is presented for comparison purposes only. This report states that if all large woody debris in the Satilla River were removed, then there would be 40 percent decrease in the insect population and a significant reduction in fish. This report was cited to draw a comparison to Hardin County's proposal to remove all storm debris from waterways within the county. By contrast, the NPS debris removal project within the Preserve is quite small, having minor adverse effects to fish and wildlife, and as the text in the EA states, would contribute only a small increment to the overall cumulative effect on fish and wildlife in the broader area. This is not a major (significant) effect, nor an unacceptable impact, and thus would not result in impairment.</p>

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62	NPS regulations require that a floodplain statement of finding be included in an EA for public comment when there are impacts to floodplains. No statement of finding was included in this EA.	Per NPS policy, (Director's Order 77-2 Floodplain Management), a Statement of Findings for floodplains is required when a proposed action is found to be in an applicable regulatory floodplain and relocating the action to a non-floodplain site is considered not to be a viable alternative. The debris removal effort cannot occur outside the floodplain, as it is not possible to relocate the action to a non-floodplain site; therefore, without a viable non-floodplain alternative, a Statement of Findings is not required.
63	Page 56-58, Floodplains, alternative A: Since the whole justification for this project is to reduce flooding to the neighboring communities, then the no action should at least show that there will be flooding as a result of taking no action. What this clearly shows is that this debris is not believed to be causing any impacts since you state that "Alternative A would have no impact on floodplain values as a result of leaving the debris in the channel." You also give no probably or extent that this alternative would cause any future flooding beyond what currently is. ¹ The NPS has hydrologists on staff, why was no hydrologic modeling been done to determine impacts and make forecasts? ² Page 59: Then further on page 59 in the section under alternative B the EA states "removal of woody debris under alternative B would result in much smaller, possibly undetectable changes to flood elevations in the project area." How is it possible that "undetectable changes" to flood elevations for this alternative would justify making this the preferred alternative. Clearly NPS had already made the decision that they were going to remove this debris before performing an objective analysis and basing the decision on technical and scientific information. The choice of a preferred alternative was clearly arbitrary and capricious without an objective look at the impacts. ³	The No Action Alternative (Alternative A) presents a baseline for comparison, and with no activities occurring under this alternative, there would be no change to the current status of the floodplain; therefore, the text in the EA is correct in stating that there would be no impacts to floodplains (functions or values) under this alternative. ¹ Hydrologic modeling was not deemed necessary to describe the context, duration, and timing of impacts in this environmental analysis, as the EA presents the necessary information to conduct an adequate analysis and comparison of impacts. ² The text in the EA is correct in that Alternative B would have only negligibly greater impacts to floodplains than Alternative A. The decision to implement Alternative B was determined after careful review of the environmental analysis and after considering public comments. ³
64	Page 61, Wetlands, Intensity Level Definitions, NPS states "to disturb or alter wetlands functions and values". What are the wetlands functions or values that this proposal may affect?	Examples of wetland functions and values can be found in the second and third paragraphs under the heading "Wetlands" on page 37 of the EA.
65	There are clearly some items that are missing from the list of past, present and reasonably foreseeable future actions that have an impact on the project area. Golf Course at Pinewood Estates is located on the edge of LPIB. All the fertilizer and pesticides runoff this course can have a large effect on the water quality of the bayou, particularly after a rain event.	The golf course at Pinewood is described in the list mentioned in the comment. See the second paragraph under the heading "Private Development Proposals" on page 55 of the EA.
66	Cumulative Impact Analysis Area - All Resources: NPS does not follow its own regulations when it sets the analysis area for all the topics as the same. Clearly the water going down the Bayou does not stop at the Highway 69 Bridge, neither does the floating debris that could potentially float downstream as a result of either alternative B or C. These areas have to be assigned on a topic basis. Water Quality and Floodplains	The general geographic boundary for the cumulative effects analysis is the floodplain, which is described on page 53 of the EA. NPS considers this to be a reasonable geographic scope because the core of this project revolves around an action within the floodplain. The general geographic scope provides physical boundaries that are used to develop a list of pertinent projects and actions (also referred to as the "cumulative scenario") that occur within those boundaries. In essence, this general list of projects is a "grab-bag" of projects to be

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	particularly need to be expanded to include areas downstream to at least the saltwater barrier on the Neches River.	considered for the cumulative analyses of all resource topics. Then, for each specific resource topic, only those projects from the "grab-bag" that cumulatively affect that particular resource area are considered, thus providing a resource-specific geographic boundary for each resource-specific cumulative effects analysis.
67	Cumulative impact sections for each alternative list cumulative impacts as minor adverse. This stream is on the 303(d) list of impairment for dissolved oxygen as a result of past and present action, many of which are listed in the cumulative impact scenarios. Please tell me then how they could be "of little consequence" as is the definition for minor impacts. Shading of the water through the canopy helps lower water temperature and increases the dissolved oxygen levels. This project along with many of the others will reduce the canopy (helicopter damaging canopy directly over stream, removing debris that shades water, as well as taking out trees in water that shades water), all will lead to a decrease in dissolved oxygen levels. You are not even accurately determining impacts according to your own vague impact intensity thresholds.	The impact of the proposed action on dissolved oxygen levels and water quality in general would be negligible and highly localized because of the limited scope of the project, that is, removing a limited number of large woody debris collections within a small segment of the bayou. Additionally, rotorwash from the helicopter helps to minimize damage to the canopy by temporarily spreading the canopy below the helicopter, and there would be no removal of mature live standing trees that provide canopy cover. The negligible impacts on water quality from the selected action would contribute slightly to the overall cumulative impacts on regional dissolved oxygen levels/water quality. Impacts on dissolved oxygen levels have been added to the cumulative impacts analyses in the Water Quality section of the EA. Please see the Errata Sheet.
68	"[Page 61 Wetlands] Cumulative Impacts section for all three alternatives: Each of the cumulative impacts sections for wetlands describes a the proposed 2,600 acres development in Hardin County that is located within the floodplain and would effect wetlands. Residential developments result in a permanent loss of wetland function, both hydrologic and vegetative. The conclusions reached in the cumulative impact analysis, which include the development as well as numerous other projects, states the cumulative impacts would be "minor to moderate." The effects of the development alone exceeds the Impact intensity threshold for moderate impacts, therefore the cumulative impacts alone are a major without this project, much less with it.	As analyzed in the EA, this project does not result in major (significant) adverse impacts to wetlands. The residential development proposed by Hardin County is in the planning phase, and thus, more specific information regarding impact to wetlands from this development is not available; therefore, the cumulative effects analysis in the EA states conservatively that it is likely this project will impact wetlands to some degree. This, combined with impacts to wetlands from other projects in the cumulative scenario and the no or negligible effects to wetlands as a result of this project, would have an overall minor to moderate cumulative effect to wetlands in the general area. This conclusion is based on a general understanding of the impacts from these projects on wetlands compared to the general amounts and types of wetlands in this area, which does not meet the threshold of a major impact. This project will have no or negligible impacts to wetlands (that is, none or barely perceptible), which would contribute a very small increment to the overall cumulative effect to wetlands.
Consultation and Coordination		
69	I support...a Congressional Inquiry and public hearings into why input from major stakeholders is being ignored and why the necessary steps are not being taken to avoid potential loss of lives and property in our community due to flooding.	NPS conducted public scoping for a 30-day period beginning November 15, 2007 during which there were no requests for a public meeting. The NPS also provided a 35-day review period for the EA ending May 15, 2008. The NPS mailed out over 600 notices each time, including all residents of Pinewood Estates that were on the County tax rolls. NPS has considered all public input in the development of the EA and in selection of Alternative B as the Preferred Alternative and the alternative to be implemented.
70	In my comments on the scoping brochure, I requested to be included on all future correspondence that related to this project. However, I never received a copy of the Notice of Availability for the release of this EA, and had to	NPS apologizes that you did not receive the mailed notification of the EA being available for public review. You have been added to the Preserve's mailing list for all future correspondence related to this project. In addition to the mailing, to inform the public of the availability of the EA, NPS

Comment ID #	Representative Quotes	Responses
	learn (several weeks after the EA was available for public comment) from other channels that the EA had been released ¹ . Therefore I was not afforded proper amount of time to fully review the document. ²	also placed an ad in the local newspaper and made the document available on the NPS PEPC website. ¹ The EA was available to the public for a 30-day review period, which NPS extended by an additional 5 days due to public request, for a total 35-day public review. ²
71	It is troubling that the reference (Hannah 2008) that details the consultation with TPWD was made by the preserve's secretary.	Consultation with U.S. Fish and Wildlife Service and Texas Parks and Wildlife Division was conducted by the Preserve biologist, and the reference has been corrected. Please see the Errata Sheet.
72	Public comments are not a voting situation where the most votes wins. The NPS seems to be taking a different stance here. It states " The majority of the public that commented during the 30-day scoping period supported the removal of Hurricane Rita related LWD and foreign debris from the Preserve because of the impacts that flooding has on public safety and local communities. Based on feedback on the proposal and information relating to flooding trends in the Pine Island Bayou watershed since Hurricane Rita that the NPS received during the scoping period, the public interest would be served in addressing Hurricane Rita related LWD and foreign debris in a portion of the LPI corridor unit." ¹ The purpose of scoping was to identify issues that need to be addressed in the EA. No where does it state what issues were raised during the scoping, beside the comments from TPWD that recommended the no action alternative. I am pretty sure that the Sierra Club, BTA and others would have raised issues yet they are not discussed in this document anywhere. It appears NPS is trying to create the illusion that there is overwhelming public support for this proposal and no other substantial issues were raised in the scoping. ²	The referenced text is taken out of context and misinterpreted as it is intended to support a discussion in the EA of appropriate use, not public scoping. The input that NPS received during the 30-day scoping period is relevant and applicable to the appropriate use analysis, specifically with regards to the criterion of whether the public interest would be served. In the EA, the text following the cited sentence refers to the protection of resources and minimal disturbance, and the entire paragraph is intended to indicate the balance of the proposal between these disparate interests. ¹ See page 107 in the EA for a discussion of the results of public scoping. ²

References

Columbia Helicopters

2008 Personal communication between Ashley Cobb (Louis Berger Group) and Jerry Martin (Columbia Helicopters) regarding the likelihood of logs "spinning" and damaging understory when being removed by helicopter. July 10, 2008.

Klein, I. M., S. D. Finley, and G. R. Wilde

1996 Habitat Preferences of the Paddlefish in the Lower Neches River, Texas. Department of Range, Wildlife, and Fisheries Management, Texas Tech University, Lubbock, Texas. Available at: <http://www.sdafs.org/tcafs/meetings/96meet/klein.htm>