

Appendix E

2015 Agency Correspondence and Responses



FEMA

January 29, 2015

Mr. Bruce Kindle
Acting Field Supervisor
Texas Coastal Ecological Services Field Office
U.S. Fish and Wildlife Service
6300 Ocean Drive, Unit 5837
Corpus Christi, TX 78412

Dear Mr. Kindle:

This letter is to initiate informal consultation between the Federal Emergency Management Agency (FEMA) and your office under Section 7 of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) regarding wildfire mitigation activities at the Smithville Research Center of the MD Anderson Cancer Center (MDACC), located at 1801 Park Road 1C, Smithville, Bastrop County, TX 78957 (Latitude: 30.05940; Longitude: -97.17270), using funds associated with FEMA's Hazard Mitigation Grant Program (HMGP); DR-1791-TX Project #291. FEMA previously consulted with your office on this project in August 2012 with a determination of not likely to adversely affect the endangered Houston toad (*Bufo houstonensis*), and U.S. Fish and Wildlife (USFWS) concurred with that determination by letter dated September 19, 2012. Since that time, MDACC has revised the project design, therefore FEMA is re-initiating consultation under Section 7 of the ESA based on the new scope of work. No work has been conducted under this project.

Three federally endangered species are known to occur in Bastrop County: Houston toad (*Bufo houstonensis*); Navasota ladies'-tresses (*Spiranthes parksii*); and whooping crane (*Grus Americana*). In addition, the Smithville Research Center is located in designated critical habitat for the Houston toad.

FEMA is making a "no effect" determination for Navasota ladies'-tresses (*Spiranthes parksii*) and the whooping crane (*Grus Americana*) and therefore is not consulting with USFW regarding these species.

However, the proposed action is taking place in critical habitat for the Houston toad, and there is a potential for the Houston toad to be present at the project site. Therefore FEMA is requesting informal consultation with your office in regard to this species.

FEDERAL ACTIONS INCLUDED IN THIS CONSULTATION

MDACC proposes to conduct vegetation removal within four fuel management units (FMUs) over approximately 65 acres on the Smithville campus in order to reduce the intensity of a surface or crown fire. The goal is to reduce heavy under- and mid-story fuels to reduce the intensity of surface fires and to reduce the probability of fires transitioning from the ground surface to the tree canopy. The intent is to remove ladder fuels and keep the existing canopy to the greatest extent practicable and to keep smaller oak and pine trees that will contribute to future canopy. The future condition goal is to facilitate a minimum of 70 percent canopy closure throughout the project area, however much of the area currently has less than 70 percent canopy closure. Enclosed are before and after photos that illustrate MDACC's objective to create shaded fuel breaks with this project. Fuels reduction activities will only be conducted from July 1 to December 31, outside of the Houston toad breeding season and emergence period.

The FMUs (see enclosed map) are classified by the dominant vegetation species present and the overall fuel reduction prescribed. FMU #1 is 18.4 acres, consists of post oak/blackjack oak woodlands and loblolly pine ravines, and has a dense fuel load and dense canopy cover. FMU #2 is 29.6 acres, consists of post oak/blackjack oak woodlands and loblolly pines, and has a moderate fuel load. The canopy cover in FMU #2 is heavy, but is not as dense as in FMU #1. FMU #3 is 13.5 acres and is an interior area of the campus where vegetation and canopy cover is sparse. This area was previously treated and since that time many large trees have blown down and are creating a heavy surface fuel load. FMU #4 is a small 3 acre area near the entry to the campus that consists of post oak/blackjack oak woodlands with dense canopy cover.

The 65 acre treatment area is a mosaic in terms of existing vegetation species and canopy cover, therefore the wildfire mitigation treatment approach will vary according to what vegetation is in place at each treatment site. In areas with a dense overstory, the mid-story and understory fuels (mainly yaupon and eastern red cedar) will be removed and the canopy trees will be pruned. In some cases, this could include the removal small living pine and oak trees. In some places, there is not 70 percent canopy cover and/or small pockets where the overstory is not as dense or is not mature. In these cases, healthy pine and oak trees, no matter what the size, would be favored and not cut so that the future canopy would be protected. Suppressed and unhealthy oaks and pines that are interfering with the success of healthy oak and pine might be cut. Suppressed trees include those that meet one or more the following criteria: infested by insects; infected with diseases such as cankers; dead (unless kept as wildlife snag); V-shaped, co-dominant stem in lower 2/3 of tree; crook, sweep or lean; greater than 20 percent dead or broken top; greater than 30 percent of the trunk is missing bark; or less than 50 percent of the tree has a live crown. The treatment will focus on removal of underbrush and ladder fuels. The focus is also on keeping large living canopy trees and smaller pines and oaks when the existing canopy is not dense. Small living pines and oaks would be selectively removed only when necessary to achieve the stated purpose and need of hazardous fuels reduction. If the tree does not contribute to wildfire hazard, and if it is not suppressed, it will not be removed.

More specifically, in FMUs #1, 2 and 4, small-diameter under- and mid-story woody vegetation (primarily yaupon and cedar) will be removed to eliminate ladder fuels. Eastern red cedar, the majority of which are less than 4 inches in diameter at breast height (dbh) will be removed.

Some eastern red cedar, especially larger trees that provide canopy cover, may be left in place to maintain 70 percent canopy coverage. Trees will be pruned up to no more than 8 feet off the ground. Trees will be pruned using only a pole pruner and/or appropriate chainsaw with 12", 14", or 16" guide bars. Dead standing and fallen trees may be removed from the site, may be chipped in place, or may be left in place for wildlife habitat. No root balls or stumps will be removed, mechanically excavated, or pushed. All stumps will be cut to a height no greater (on average) than 4" above the ground measured on the uphill side.

When absolutely necessary for fuels reduction purposes, some small diameter living oaks and pines will be selectively removed in FMUs #1, 2, and 4. Suppressed and unhealthy oak trees and pine trees will be removed in favor of removal of healthy trees whenever possible. A tree that meets one or more the following criteria should have preference for removal over healthy trees: infested by insects; infected with diseases such as cankers; dead (unless kept as wildlife snag); V-shaped, co-dominant stem in lower 2/3 of tree; crook, sweep or lean; greater than 20 percent dead or broken top; greater than 30 percent of the trunk is missing bark; or less than 50 percent of the tree has a live crown.

In the loblolly pine ravines (FMUs #1 and #2), trees will be selected for removal based on established forestry principles with the goal of improving the stand's health, vigor, and diversity as well as maintaining soil retention. Living pines will only be cut in cases where they contribute to the risk of a crown fire and only in areas of dense vegetation where they absolutely must be removed to achieve fuels reduction, while at the same time retaining at least 70 percent overstory canopy cover where it exists. Suppressed and unhealthy trees will be removed in favor of healthy trees. The intent of the proposed project is not to clear cut the FMUs, rather the intent is to reduce the threat of a crown fire by removing ladder fuels while maintaining the existing canopy (see enclosed before and after photos as an example of proposed treatment). All work within ravines will be accomplished by hand clearing. No mechanized equipment will be used within or directly adjacent to these ravines.

Finally, in FMU #3, dead and downed logs will be removed to the temporary debris staging area or would be mulched and spread on site. Downed trees and logs that will be moved, removed to a staging area, mulched, disturbed by a falling tree that is scheduled to be cut, or otherwise disturbed must be lifted and inspected by the Houston toad monitor to determine if any Houston toads are sheltering beneath.

All vegetation clearing will be accomplished with hydraulic mulching machines, wheeled vehicles, or hand clearing. No bulldozers or tracked vehicles will be permitted for this treatment. Certain areas, including those less than 30 feet from a structure or within 200 feet from potential Houston toad breeding sites (i.e. riparian areas, ravines, ephemeral wet weather ponds, creeks, streams, drainages, ponds, stock tanks, wetlands, seeps, and springs) will be treated by hand and mechanical equipment will not be used unless authorized by the Houston toad monitor that is on site. Spreading of mulch will further reduce any potential erosion created by ground disturbance. Also, if the project site experiences 2-inches of rain or more over a 48-hour period, vegetation management work must cease for 24 hours beginning from the last rains. This will help reduce rutting and ground disturbance. Any large tire ruts will be smoothed so as not to create an undesirable breeding pond.

Two to three standing dead and down trees will be maintained for wildlife habitat per acre. Additionally, one to two wildlife piles will be created per acre. Ladder fuels, dead and downed trees not used for wildlife, and small diameter living trees will either be mulched and spread on site with a hydraulic mulching machine, or vegetative debris will be hauled to a temporary debris staging area on the MDACC campus to be ground on-site for haul away. The temporary staging area will be located on an open field within FMU #3 and is approximately 1 acre. The area will be exclosed prior to operation to ensure that no Houston toads are present and that no Houston toads enter the debris staging area throughout the duration of the project. The haul routes to and from the treatment areas are shown on the enclosed maps and generally will utilize existing roads and trails.

Applying fuel reduction treatments is a dynamic process where decisions are made real-time based on what is present in the field, which is not uniform. A qualified forester will be on site to initiate the fuel reduction task in accordance with the treatment prescription and will periodically monitor the progress and the compliance of the fuel reduction specifications.

Per FEMA grant requirements, MDACC must maintain the areas where hazardous fuels reduction activities have been completed to achieve the proposed wildfire hazard mitigation.

In addition to fuels reduction, MDACC may use any remaining funds to harden critical buildings and research laboratories on the campus so they can better withstand impacts from wildfire. The hardening measures will include mechanical additions and modifications to HVAC systems to allow for 100 percent recirculation of return air to avoid smoke infiltration. Fire resistant roofs, doors, and windows may also be installed at these buildings. Equipment staging areas would consist of private streets, parking lots, and other areas where the ground surface has already been disturbed; thus no additional vegetation clearing would be necessary for equipment staging.

STATUS OF HOUSTON TOAD IN PROJECT AREA

The Houston toad depends on healthy and mature forest ecosystems with mixed species composition, significant canopy cover, an open understory layer with a diverse herbaceous component, and breeding areas (ephemeral wet-weather ponds and other water features, such as stock tanks, creeks, streams, wetlands, seeps, and springs) with shaded edges. They are most commonly found within the surrounding upland habitat adjacent to breeding sites. As juveniles, the toads use drainages and riparian areas for dispersal and movement. The edges of breeding ponds are used by emerging juvenile toadlets after they metamorphose from their larval (tadpole) stage (USFWS, 2011a).

This species is largely inactive during hot, dry seasons and during the coldest months, though surface movement has been documented during the summer months (Brown et al, 2011; SSAR, 2012) depending on weather conditions. Most breeding occurs from February to April, when the minimum air temperature is above 14 C. Breeding has been reported as late as June. Breeding habitat consists of a body of water supporting the reproductive and larval toad life stages. Eggs and larvae develop in shallow water. For successful breeding, water must persist for at least 60 days. Larvae hatch in four to seven days and metamorphose in three to nine weeks, depending

on the water temperature. This species locally migrates between breeding and non-breeding habitats. The adjacent uplands support adults year round and provide patch connectivity outward from the ponds for juvenile dispersal (USFWS, 2011c). The toad tends to occupy areas with 60 percent to 100 percent canopy cover (Forstner et al., 2011). Upland forests in the Lost Pines area of Bastrop County serve as occupied and dispersal habitat for the Houston toad and cover/shade is a necessity to facilitate distribution without desiccation (LPRT, 2011).

Prior to the Bastrop County Complex Fire in 2011, the Houston toad range in Bastrop County was in poor condition as a result of what is speculated to be the worst one-year drought on recorded history for this area (LPRT, 2011). In 2011, approximately 41 percent of the high suitability habitat for the Houston toad within Bastrop County was moderately to heavily burned during the above referenced fire (Forstner et al., 2011). Houston toad egg strands, tadpoles, toadlets, juveniles, and adults have all been detected inside and outside the burn perimeter in the years following the fire. Houston toads have been detected in Bastrop during chorusing season and during dispersal from the ponds in 2012, 2013, and 2014. Many Houston toad detections after the fire have been made to the north, west, and south of the burn perimeter (Dr. Forstner, personal communication January 2015). These encounters have substantiated that the Houston toad survived the wildfire and that it is present inside and outside the burn area in Bastrop County. The 2011 Bastrop County Complex Fire did not reach the MDACC campus, but portions of the eastern edge of the fire burned as close as $\frac{1}{2}$ to $\frac{3}{4}$ miles from the campus. No Houston toad surveys have been recently completed for the MDACC site during chorusing season.

The entire project area falls within Houston toad critical habitat and within the Lost Pines Habitat Conservation Plan area. MDACC sponsored presence/absence surveys for the Houston toad in 2007, 2008, and 2009 on approximately 700 acres of MDACC property where the federal action is proposed. The surveys were conducted by SWCA Environmental Consultants (SWCA) during the Houston toad breeding season between February 1 and April 30. The 700-acres were surveyed along three transects that were physically walked during each survey period. The results of the three years' surveys are described below in Table 1. No Houston toads were observed during these surveys on the MDACC property, but toads were detected off-site at known breeding ponds. No surveys have been conducted for Houston toads at the MDACC campus since the fire. Following the Bastrop County Complex Fire, Houston toads have migrated and are moving into areas not known to have detections, at least as seen based on survey results since 2012 (Dr. Forstner, personal communication January 2015).

Per Greg Creacy with the Texas Parks and Wildlife Department (personal communication May 16, 2012) there is a pond about 50 yards from the project site within Buescher State Park where Houston toads have chorused in the past. Per Dr. Forstner (personal communication January 2015), the MDACC campus is high on a hill and Houston toads were not detected there during 2002-2003 surveys designed to detect them. However, following the Bastrop County Complex Fire in September 2011, Houston toads are known to have migrated and are continuing to laterally move out from the burn area into previously unoccupied areas such as the MDACC campus.

Table 1
Summary of Houston Toad Surveys at Smithville Research Center

Survey Year	Summary of Survey Results
2007	SWCA surveyed the Smithville Research Center property for seven nights during the 2007 Houston toad breeding season. In addition, SWCA visited three known breeding sites (off-site) throughout the surveys for use as Houston toad reference ponds. Houston toads were observed at the three reference sites on four out of seven visits. No Houston toads, however, were observed within the MD Anderson survey area during any of the seven visits (SWCA Environmental Consultants, 2007).
2008	SWCA surveyed the Smithville Research Center property for six nights during the 2008 Houston toad breeding season. In addition, SWCA visited two known breeding sites (off-site) throughout the surveys for use as Houston toad reference ponds. Houston toads were observed at one site (Bastrop State Park Lake) on four out of six visits. No Houston toads were observed within the MD Anderson survey area during any of the six visits (SWCA Environmental Consultants, 2008).
2009	SWCA surveyed the Smithville Research Center property for five nights during the 2009 Houston toad breeding season. SWCA visited two known breeding sites in Bastrop State Park (BASP) and Buescher State Park (BUSP) and multiple pond locations throughout Bastrop County prior to each survey for use as Houston toad reference ponds. No Houston toads were observed within the MD Anderson survey area, BASP, or BUSP during any of the five visits (SWCA Environmental Consultants, 2009).

AVOIDANCE AND MINIMIZATION MEASURES

The following avoidance and minimization measures will be implemented by MDACC for the proposed FEMA-funded wildfire mitigation activities in order to minimize impact to the Houston toad. These measures have been adapted from the USFWS Best Management Practices (2011a, 2011b); the Lost Pines Habitat Conservation Plan (Loomis Austin, 2007) and the Bastrop Utilities Habitat Conservation Plan (2005); and FEMA consultations with USFWS for debris removal activities in the Bastrop burn area and other wildfire mitigation projects being conducted in Bastrop County. Implementation of these measures is a condition of federal funding.

1. The structure hardening component of the federal action can take place at any time of year.
2. Vegetation management activities within the fuel management units (FMUs) can only take place from July 1 to December 31 (outside of the Houston toad breeding season and emergence period). This period may be extended, with approval of FEMA and USFWS, past December 31 if it is determined that Houston toads are not yet active in the area.

3. For all vegetation management activities, FEMA/MDACC will deploy a Houston toad monitor that holds federal and state permits for identifying, locating, handling, removing, and transporting the Houston toad. Should a Houston toad be encountered during vegetation management activities, work must cease immediately. The biological monitor will secure the area containing the Houston toad, then proceed as directed by the U.S. Fish and Wildlife Service's Texas Coastal Ecological Services Field Office who will be contacted immediately at (281) 286-8282.
4. If the project site experiences 2-inches of rain or more over a 48-hour period, vegetation management work must cease for 24 hours beginning from the last rains.
5. All work crews must be trained by a Houston toad biologist prior to starting work. Training will include an overview of Houston toad characteristics, life cycle, and habitat requirements, and a review of the work conditions outlined in this agreement. All crew personnel must be trained prior to starting work.
6. The number and size of entry and exit points for heavy equipment to move into and out of forested areas will be kept to the minimum needed for conducting safe and effective vegetation management.
7. Vegetation that occurs within 200 feet of potential Houston toad breeding sites as determined by the Houston toad monitor (i.e. riparian areas, ravines, ephemeral wet weather ponds, creeks, streams, drainages, ponds, stock tanks, wetlands, seeps, and springs) will be hand cut unless otherwise approved by the Houston toad monitor. Any soil disturbance or operation of heavy equipment within 200 feet of a potential breeding site must be approved by the Houston toad monitor prior to the start of work.
8. Downed trees and logs that will be moved, removed to a staging area, mulched, disturbed by a falling tree that is scheduled to be cut, or otherwise disturbed must be lifted and inspected by the Houston toad monitor to determine if any Houston toads are sheltering beneath.
9. Any mowing equipment used for clearing grass, forbs, and small-diameter woody vegetation will be set at a height of at least 5 inches above the ground to minimize the potential for striking toads.
10. FEMA/MDACC must stage and/or process debris that results from vegetation management activities via one or a combination of the following methods:
 - **Haul to Final Disposal Site:** Vegetative debris resulting from the proposed action can be hauled by the end of that work day to the final disposal site.
 - **Temporary Staging:** Any debris that is not mulched or hauled, must be staged in one or a combination of the following areas:
 - **Staging within an Exclosure:** Vegetative debris may be temporarily staged on undeveloped natural ground on the MDACC campus within an exclosure that is

separated from the natural environment by an intact silt fence that extends at least 4 inches into the ground. The silt fence must be inspected daily to ensure that it has not been compromised or breached. Any necessary silt fence repairs or replacement will be made immediately.

- Staging on Caliche: Vegetative debris may be temporarily staged on caliche parking areas/surfaces on the MDACC campus for a maximum of 24 hours. All debris at any one caliche site must be moved to an exclosed area or final disposal within 24 hours of being deposited at that temporary staging site.
- Staging on Asphalt: Vegetative debris may be temporarily staged on asphalt parking areas/surfaces on the MDACC campus for a maximum of 72 hours. All debris at any one asphalt site must be moved to an exclosed area or final disposal within 72 hours of being deposited at that temporary staging site.
- **Mulching:** Vegetative debris may be mulched on-site the day that it is cut and spread on the forest floor. FEMA/MDACC will make every effort to spread any mulch, chips, or other woody debris in no more than a 2-inch layer on the forest floor.

11. FEMA/MDACC shall dispose of all waste materials in accordance with Texas Commission on Environmental Quality (TCEQ) standards and requirements, including obtaining any required permits for temporary staging. Final disposal of all debris will be conducted in accordance with TCEQ regulations.
12. Streams, riparian zones, wetlands, and areas near potential Houston toad breeding sites will not be used for staging equipment or refueling. Equipment must be stored, serviced, and fueled at least 200 feet away from these sensitive areas.
13. Gasoline- and diesel- fueled field equipment must be inspected daily for signs of fuel or hydraulic leaks. Leaking equipment, or spills detected will be addressed immediately upon detection and equipment removed from the habitat until fully repaired. All materials will be immediately contained and removed to prevent soil contamination. All hazardous materials will be properly contained, used, and/or disposed of.
14. Following vegetation management activities, FEMA/MDACC will ensure that equipment used on undisturbed ground has not resulted in potential artificial breeding sites. For example, large tire ruts will be smoothed so as not to create an undesirable breeding pond.
15. Under no circumstances will stumps be removed mechanically (i.e., excavated or pushed).

DETERMINATION

As noted above, the federal actions covered by this consultation are taking place in designated critical habitat and FEMA has a responsibility to ensure that its actions will not likely result in the destruction or adverse modification of this habitat. Destruction or adverse modification of critical habitat is defined as a direct or indirect alteration that appreciably diminishes the value of

critical habitat for both the survival and recovery of a listed species. Such alterations include those adversely modifying any physical or biological features that were the basis for determining the habitat to be critical. Primary constituent elements have not been designated for the critical habitat of the Houston toad, but typical habitat for the species includes areas with a soil type that allows for the weak burrowing behavior of the species and both temporary and permanent ponds (White et al, 2006). The activities proposed by MDACC will not impact temporary or permanent ponds nor will they alter soil type. The vegetation management activities proposed by MDACC do not involve the removal of canopy trees, therefore the canopy, which provides shaded habitat for toad dispersal, will not be adversely impacted. MDACC intends to maintain at least 70 percent canopy cover where it already exists. In areas with limited overstory and a more open canopy, MDACC plans to keep smaller oak and pine trees that will contribute to future canopy. Measures are being taken to minimize impact of any work that is conducted immediately adjacent to breeding areas (ephemeral wet-weather ponds, creeks, streams, wetlands, seeps, and springs). Measures are also being taken to minimize ground disturbance which will minimize impacts to pine and other seedling growth.

Though past surveys have not documented the Houston toad in the project area, there is still a potential that they may disperse across the project site and an even lower potential that they may chorus at the project site. Work in forested areas will not be allowed during chorusing season (January 1 to June 30). In general, Houston toads aestivate during the hot summer months and their movement along the surface is not as prevalent as during chorusing season. However, toads may be encouraged to surface and move from their sheltering locations after heavy rain events. This movement on the surface outside of chorusing season is addressed by the avoidance and minimization measures above.

Based on a review of the Houston toad and its habitat requirements; the assumption that adult toad population numbers are likely low in the project area based on recent past population surveys; the location of work; the restriction of work in forested areas to outside of chorusing season; and the implementation of required avoidance and minimization measures, FEMA has determined that the federally funded work described above may affect, but is not likely to adversely affect the Houston toad. FEMA has also determined that its actions will not adversely modify critical habitat.

FEMA requests your concurrence with this effect determination and input on any additional conservation measures required to ensure accuracy of this determination. Thank you for your attention and assistance. Should you have any questions, please contact FEMA Environmental Specialist, Dorothy Weir at Dorothy.Weir@fema.dhs.gov or at 940-435-9275.

Sincerely,

Kevin Jaynes
Regional Environmental Officer
FEMA Region 6

Enclosures: Example Treatment Photos
Map of Fuel Management Units (FMUs)
Map of Temporary Debris Staging and Grinding Site

cc: David Hoth, Assistant Field Supervisor, Coastal Ecological Services Office

REFERENCES

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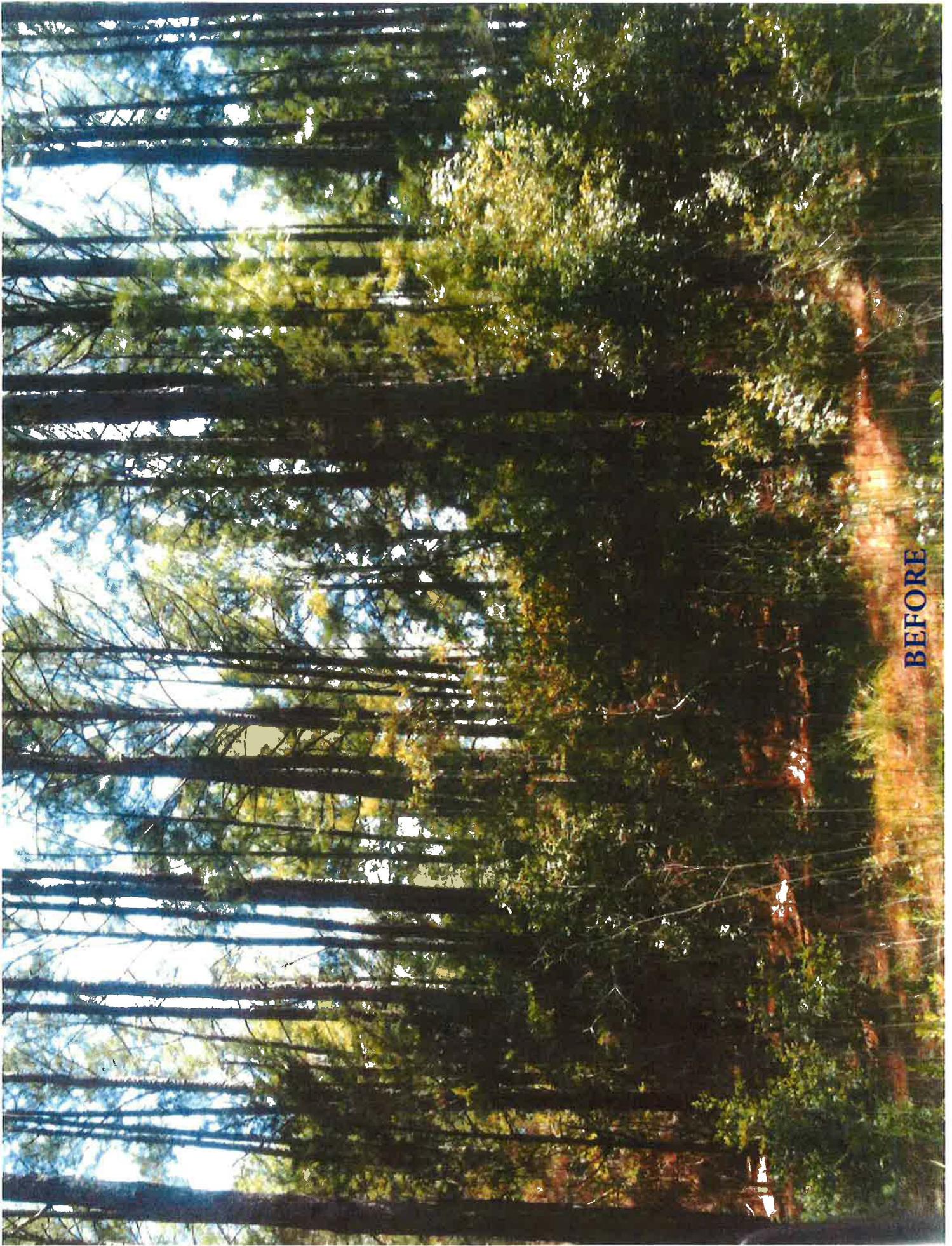
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BEFORE



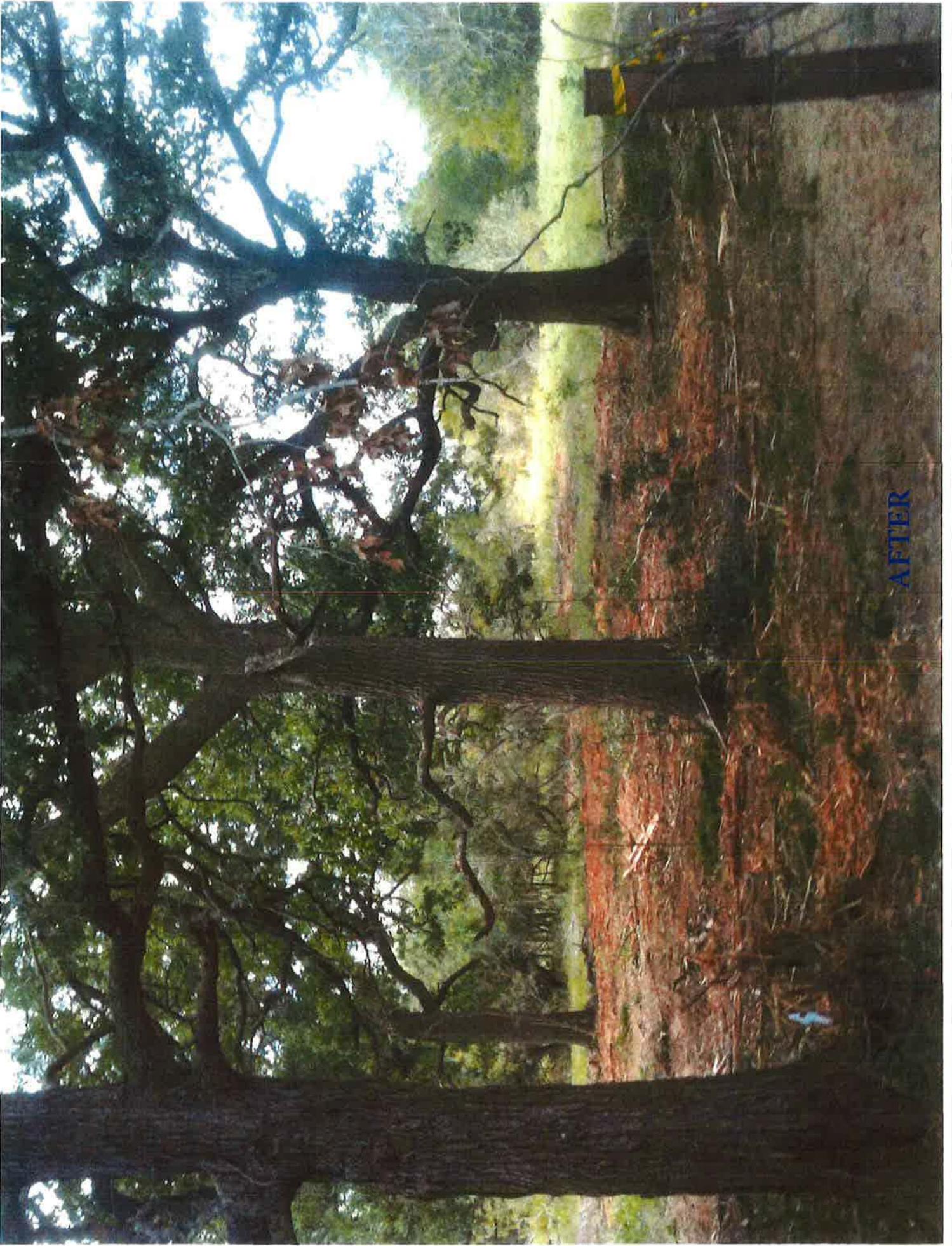
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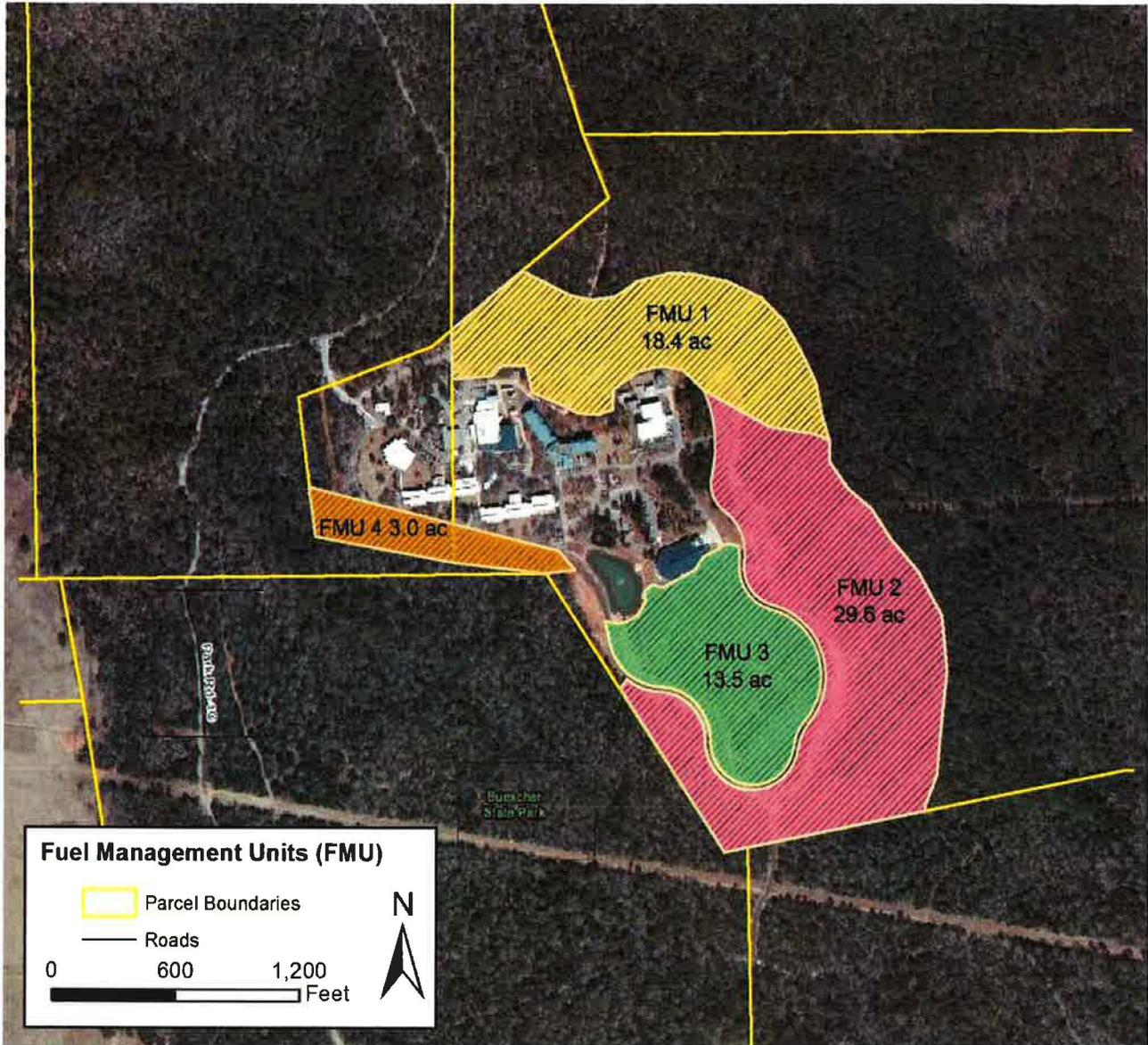
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Map of Temporary Debris Staging and Grinding Site



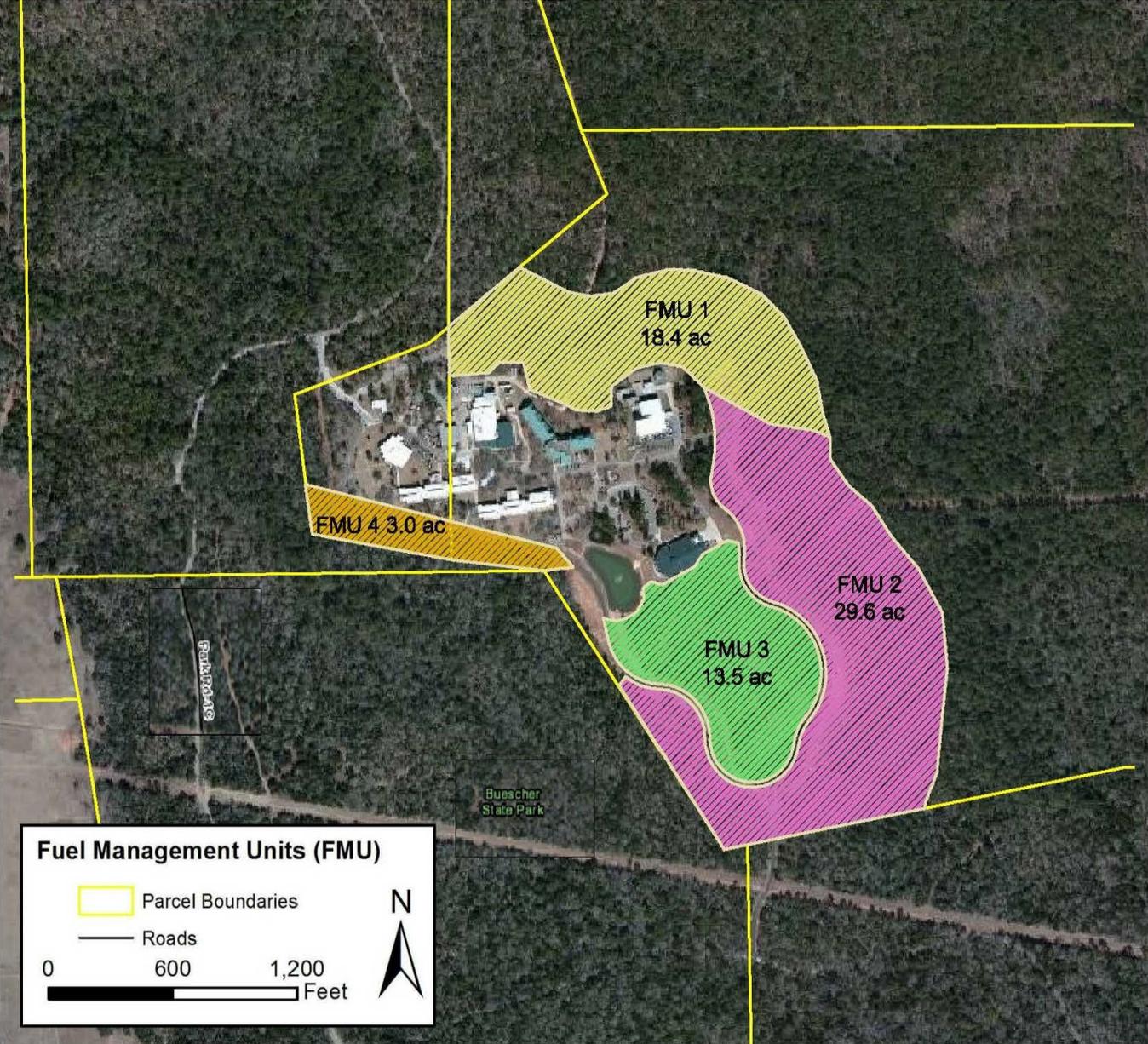
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AFTER





Map of Temporary Debris Staging and Grinding Site



In Reply Refer To:
FWS/R2/TCES/

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Texas Coastal Ecological Services Field Office

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Houston, Texas 77058

281/286-8282 / (FAX) 281/488-5882



May 28, 2015

Kevin Jaynes
U.S. Department of Homeland Security
FEMA Region 6
800 North Loop 288
Denton, Texas 76209-3698

Dear Mr. Jaynes:

Thank you for your letter dated January 29, 2015, re-initiating consultation pursuant to Section 7 of the Endangered Species Act (Act) for the Federal Emergency Management Agency's (FEMA) funding of recovery operations related to the Bastrop County Complex Fire of September 2011. FEMA is providing Hazard Mitigation Grant Program (HMGP) funding to undertake wildfire mitigation (mechanical thinning of understory vegetation) within approximately 65 acres on M.D. Anderson Cancer Center's (MDACC) campus located at 1801 Park Road 1C, in Smithville, Bastrop County, Texas. FEMA previously consulted on this project, with a reduced scope, in August-September 2012. Since that time FEMA has revised the project design and scope and is re-initiating consultation under Section 7 of the Act. The fire recovery actions considered herein occur within Bastrop County, Texas and are depicted in exhibits accompanying the letter request and attached herein for reference.

The U.S. Fish and Wildlife Service (Service) participated in an early coordination meeting for this project on October 30, 2014 with FEMA and an onsite meeting on December 15, 2014, at the MDACC campus with FEMA, the applicant, and their consultants. . The Service understands from the consultation request and the earlier meetings that the project includes removal of ladder fuels (under- and mid-story vegetation) that will reduce the wildfire fuel load within the 65-acre project area. FEMA determined that the wildfire mitigation actions may affect, but are not likely to adversely affect the federally endangered Houston toad *Bufo houstonensis*. The determination is based on the following information:

1. The structure hardening component of the federal action can take place at any time of year.
2. Vegetation management activities within the fuel management units (FMUs) can only take place from July 1 to December 31 (outside of the Houston toad breeding season and emergence period). This period may be extended, with approval of FEMA and USFWS, past December 31 if it is determined that Houston toads are not yet active in the area.

3. For all vegetation management activities, FEMA/MDACC will deploy a Houston toad monitor that holds federal and state permits for identifying, locating, handling, removing, and transporting Houston toads. Should a Houston toad be encountered during vegetation management activities, work must cease immediately. The biological monitor will secure the area (i.e., halt work and ingress/egress) containing the Houston toad, then proceed as directed by the U.S. Fish and Wildlife Service's Texas Coastal Ecological Services Field Office who will be contacted immediately at (281) 286-8282.
4. If the project site experiences 2-inches of rain or more over a 48-hour period, vegetation management work must cease for 24 hours beginning from the last rains.
5. All work crews must be trained by a Houston toad biologist prior to starting work. Training will include an overview of Houston toad characteristics, life cycle, and habitat requirements, and a review of the work conditions outlined in this agreement. All crew personnel must be trained prior to starting work.
6. The number and size of entry and exit points for heavy equipment to move into and out of forested areas will be kept to the minimum needed for conducting safe and effective vegetation management.
7. Vegetation that occurs within 200 feet of potential Houston toad breeding sites as determined by the Houston toad monitor (i.e. riparian areas, ravines, ephemeral wet weather ponds, creeks, streams, drainages, ponds, stock tanks, wetlands, seeps, and springs) will be hand cut unless otherwise approved by the Houston toad monitor. Any soil disturbance or operation of heavy equipment within 200 feet of a potential breeding site must be approved by the Houston toad monitor prior to the start of work.
8. Downed trees and logs that will be moved, removed to a staging area, mulched, disturbed by a falling tree that is scheduled to be cut, or otherwise disturbed, must be lifted and inspected by the Houston toad monitor to determine if any Houston toads are sheltering beneath.
9. Any mowing equipment used for clearing grass, forbs, and small-diameter woody vegetation will be set at a height of at least 5 inches above the ground to minimize the potential for striking toads.
10. FEMA/MDACC must stage and/or process debris that results from vegetation management activities via one or a combination of the following methods:
 - **Haul to Final Disposal Site:** Vegetative debris resulting from the proposed action can be hauled by the end of that work day to the final disposal site.
 - **Temporary Staging:** Any debris that is not mulched or hauled, must be staged in one or a combination of the following areas:
 - **Staging within an Exclosure:** Vegetative debris may be temporarily staged on undeveloped natural ground on the MDACC campus within an exclosure that is

separated from the natural environment by an intact silt fence that extends at least 4 inches into the ground. The silt fence must be inspected daily to ensure that it is not compromised or breached. Any necessary silt fence repairs or replacement will be made immediately.

- Staging on Caliche: Vegetative debris may be temporarily staged on caliche parking areas/surfaces on the MDACC campus for a maximum of 24 hours. All debris at any one caliche site must be moved to an enclosed area or final disposal within 24 hours of being deposited at that temporary staging site.
 - Staging on Asphalt: Vegetative debris may be temporarily staged on asphalt parking areas/surfaces on the MDACC campus for a maximum of 72 hours. All debris at any one asphalt site must be moved to an enclosed area or final disposal within 72 hours of being deposited at that temporary staging site.
 - **Mulching**: Vegetative debris may be mulched on-site the day that it is cut and spread on the forest floor. FEMA/MDACC will spread any mulch, chips, or other woody debris in no more than a 2-inch layer on the forest floor.
11. FEMA/MDACC shall dispose of all waste materials in accordance with Texas Commission on Environmental Quality (TCEQ) standards and requirements, including obtaining any required permits for temporary staging. Final disposal of all debris will be conducted in accordance with TCEQ regulations.
 12. Streams, riparian zones, wetlands, and areas near potential Houston toad breeding sites will not be used for staging equipment or refueling. Equipment must be stored, serviced, and fueled at least 200 feet away from these sensitive areas.
 13. Gasoline- and diesel- fueled field equipment must be inspected daily for signs of fuel or hydraulic leaks. Leaking equipment, or spills detected will be addressed immediately upon detection and equipment removed from the habitat until fully repaired. All materials will be immediately contained and removed to prevent soil or water contamination. All hazardous materials will be properly contained, used, and/or disposed of.
 14. Following vegetation management activities, FEMA/MDACC will ensure that equipment used on undisturbed ground does not result in potential artificial breeding sites. For example, large tire ruts will be smoothed so as not to create an undesirable breeding pond.
 15. Under no circumstances will stumps be removed mechanically (i.e., excavated or pushed).

Based on the aforementioned information, the Service concurs that the fuel reduction/wildfire mitigation is not likely to adversely affect the Houston toad or adversely modify designated critical habitat. Our concurrence with FEMA's determination of may affect, but not likely to adversely affect pursuant to Section 7 of the Act, is based upon a review of FEMA's multiple

Mr. Jaynes

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submittals, including the most recent revision to the consultation received on May 6, 2015, review of the Service's files, our multiple site inspections in Bastrop County since the fire, a site visit on December 15, 2014, communications with species experts and others, and is contingent upon adherence to the measures enumerated herein. In the event the project changes or additional information on listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.

Our concurrence is provided in accordance with the provisions of the Act of 1973 (16 U.S.C. 1531 et seq.). If you have any questions, or need additional information, please contact Mr. Jeff Hill, staff biologist or myself at 281/286-8282.

Sincerely,

A handwritten signature in blue ink, appearing to read "B. Kindle", with the word "for" written in smaller letters below it.

Bruce Kindle
Acting Field Supervisor

Enclosure: MDACC fuel reduction exhibits, 6 pgs.

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2015 JAN 21 A 10:14

U.S. Department of Homeland Security
Federal Emergency Management Agency
800 North Loop 288
Denton, Texas, 76209



FEMA

December 22, 2014

Mr. Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
P.O. Box 12276
Austin, TX 78711

RECEIVED
DEC 29 2014
Texas Historical Commission

RE: Section 106 Review, MD Anderson Cancer Center Smithville Research Center Wildfire Mitigation Project, Bastrop County, Texas; HMGP-DR-1791-TX Project #291

Dear Mr. Wolfe,

MD Anderson Cancer Center (MDACC; Applicant) is requesting Hazard Mitigation Grant Program (HMGP) funding from the Federal Emergency Management Agency (FEMA) for wildlife mitigation activities at their Smithville Research Center in Bastrop County, Texas. MDACC coordinated with your office in February 2012 and your office made a determination of "No Historic Properties Affected" on March 19, 2012. The Applicant has since changed their scope of work. FEMA has determined that this project constitutes an undertaking and is re-initiating consultation under Section 106 of the National Historic Preservation Act.

MDACC proposes to conduct vegetation removal within four fuel management units (FMUs) over approximately 65 acres in order to reduce the risk of a surface or crown fire from impacting the campus. The goal is to reduce heavy under and mid-story fuels to reduce the intensity of surface fires and the probability of fires transitioning from the surface the tree canopy. Ladder fuels, dead and downed trees, and small diameter living trees will either be mulched and spread on site with a hydraulic mulching machine, or vegetative debris will be hauled to a temporary debris staging area on the MDACC campus to be ground onsite. The haul routes to and from the treatment areas are shown on the enclosed maps and generally will utilize existing roads and trails. No root balls or stumps will be removed; stumps would be ground down to ground level as necessary and would not be mechanically excavated or pushed. Larger living trees such as pines, oaks, and some cedar trees will be pruned up to 8 feet off the ground or 1/3 of the live crown height. Certain areas, including those less than 30 feet from a structure or within 200 feet from sensitive areas (i.e. riparian areas, ravines, ephemeral wet weather ponds, creeks, streams, drainages, and other water features,) will be treated by hand and mechanical equipment such as mowers and chippers will not be used. The end goal is to develop a minimum of 70 percent canopy closure throughout the project area.

Mark Wolfe
December 22, 2014
Page 2

The Area of Potential Effects (APE) includes the 65 acre hazardous fuels treatment area, haul routes, and the temporary vegetation staging and grinding site (see enclosed maps).

FEMA staff with Secretary of the Interior (SOI) qualifications has reviewed the undertaking and has conducted a cultural records file search of the Texas Archaeological and Historic Site Atlas for known historical sites. According to the Atlas, there are no National Register of Historic Places (NRHP) properties, districts, or archeological sites within the boundaries of the APE or in the immediate vicinity of the APE.

Based on information gathered through this review process and summarized above, FEMA has made a determination of **No Historic Properties Affected** as a result of the proposed undertaking. The Applicant will be required to adhere to the following requirement as a condition of the FEMA grant:

“In the event that archaeological deposits, including any Native American pottery, stone tools, bones, funerary objects, or human remains are uncovered, the project must be halted immediately in the vicinity of the discovery, and all reasonable measures will be taken to avoid or minimize harm to the finds. The Applicant must secure all archaeological findings and restrict access to this sensitive area. The Applicant must inform TXDPS immediately. TXDPS will notify FEMA at the earliest practicable time, but not later than 24 hours. FEMA will then consult with the State Historic Preservation Office (SHPO). Work in sensitive areas must not resume until consultation is completed and until FEMA determines that appropriate measures have been taken to ensure compliance with the National Historic Preservation Act (NHPA) and its implementing regulations.”

FEMA requests concurrence with this determination. Your prompt review of this project is greatly appreciated. Should you need additional information please contact Dorothy Weir, FEMA Environmental Specialist, at (940) 383-7250.

Sincerely,



Kevin Jaynes
Regional Environmental Officer
Region 6

Enclosures

Original SHPO Response dated March 19, 2012
Map of Fuel Management Units
Map of Haul Routes and Temporary Staging/Grinding Site
Texas Atlas Map of APE

CONCUR	
by	<u>William A. Hart</u>
for	Mark Wolfe
	State Historic Preservation Officer
Date	<u>1/15/15</u>
Track#	