

PRELIMINARY PROTECTED SPECIES REPORT
PROPOSED RDA LIMESTONE MINE
April 30, 2017

Environs, LLC was contracted by RDA, LLC to complete an protected species survey of a planned limestone mine in Williamsburg County, South Carolina. The project site is approximately 804 acres and is generally bounded by Seaboard Road to the south and Wheeler Road to the east. Jumpin Run Road bisects the project site north to south from US Highway 521 to Seaboard Road. The project site is in the Black River drainage (8-Digit HUC-03040205) and lies within the Carolina Flatwoods (63h) eco-region at coordinates 33.484471° lat. and -79.633950° long. Most of the site has been used for silvicultural practices for decades and prior to that was farmed for cotton and other crops. As a result much of the terrain has been altered, and potential habitat for most of the listed species has been eliminated.

There are five species listed as federally protected in Williamsburg County: one fish, two birds and two plants. The federal Endangered Species Act requires that valid, scientific investigation for these species be completed utilizing the most current information and accepted methods for projects that require federal action, such as permitting or funding. South Carolina lists a bird and a bat as endangered. The species investigated for this project include:

- Red-cockaded woodpecker, *Picoides borealis* – Endangered (federal and state);
- Wood stork, *Mycteria americana* – Threatened (federal);
- Rafinesque's big-eared bat, *Corynorhinus rafinesquii* - Endangered (state only)
- Shortnose sturgeon, *Acipenser brevirostrum* – Endangered (federal);
- Canby's dropwort, *Oxypolis canbyii* – Endangered (federal); and,
- American chaffseed, *Schwalbea americana* – Endangered (federal).

During late 2016 and early 2017, Environs has been on-site numerous times conducting wetland assessments and evaluations for protected species and their habitats. Areas of possible territory and habitat were searched, but none of the species and very little preferred habitat was observed. The 800 acre site in Williamsburg County has been disturbed by previous farming and current logging activities, forcing out much of the endemic and rare wildlife and removing what may have been viable habitat for several of the protected species.

The two bird species are known from the project's region but are specific to certain habitats, and their presence is normally apparent. Impact to these birds are unlikely due to lack of critical habitat in the planned mine permit area. Similarly, the shortnose sturgeon requires large freshwater streams and rivers, neither of which is located on the project site. While habitat for the two plant species has the possibility of occurrence at the project site, due to their rarity, it's unlikely they inhabit the project site. To date field reconnaissance has been conducted to search for the bird and bat species. Environs has experience with the bird and bat species and can

recognize both their habitats and field characteristics. Future field investigations will focus on the listed plants during their flowering period and within areas of the project site that are most likely their preferred habitats.

The red-cockaded woodpecker (RCW), *Picoides borealis* is endangered both in federal and state status. The greatest threat to the RCW has been destruction and fragmentation of their much needed mature pine forests. RCW grows to about 8 inches in length. They are mostly black with white horizontal broken white stripes along the back. Adult males have a tiny patch of red feathers just behind the eye, but it's not displayed unless they are excited. Red-cockaded woodpeckers prefer a diet rich in ants, wood roaches, boring beetles, spiders and other invertebrates.

Unlike other woodpeckers, which make their nests in dead wood, the RCW excavate their roosting and nesting cavities in 60-80 year old living pines. They are very habitat specific. Red-cockaded woodpeckers are cooperative breeders that roost in a cluster of family trees. Because of this, they are victims of isolation as well as habitat destruction. They have almost no chance of finding suitable nest trees or a mate if they leave their home territory. There are no 60-80 year old pine trees within areas proposed for mining. Within the floodplain of Murray swamp are a few scattered, older loblolly pine trees. These trees were inspected, and there were no red-cockaded woodpeckers or evidence of nesting cavities were noted.

The wood stork, *Mycteria americana* is listed as endangered by the federal government. The decline of the American wood stork population was due to the loss of suitable feeding and nesting habitat, predation and human disturbance of rookeries. Wood storks are large (33-44 in. in height), long-legged wading birds that use a variety of freshwater and estuarine wetlands for nesting, feeding, and roosting. The mostly white *M. americana* is the only true stork that occurs in the U.S. They primarily feed on fish, crayfish, and amphibians in fresh and brackish water.

Wood storks are colony nesters, and they require trees that are in standing water or on islands surrounded with water. There are some small isolated cypress domes in the property area, but none contained trees with large nests typical of a wood stork rookery. The disturbance by logging and lack of large areas of old growth swamp, as well limited marsh type wetlands indicate that there is little, if any habitat at the site. Field observations did not reveal any wood storks on the project site.

The short-nosed sturgeon is an ancient freshwater fish that mainly inhabits large coastal rivers and streams. It sometimes will venture into more brackish estuary streams and even saltwater bays, however and it lives and spawns in freshwater most of its long lived lifespan. In Williamsburg County, the primary habitat and occurrence range of this sturgeon will be the Black, the Santee and the Sampit Rivers along with their estuaries and large direct tributary

streams. The project site is the Black River watershed and Murray Swamp eventually flows into the river over eight river miles downstream. The only direct impact to Murray Swamp proposed in the mine plan is a future road crossing which will have no effect on the sturgeon or its habitat.

Canby's dropwort is a perennial herb with erect, hollow stems, aromatic foliage and elongate, stoloniferous rhizomes. It has minute white flowers produced in terminal or axillary umbels. The sepals may be tinged red. The fruit is a strongly-winged schizocarp. The species flowers from late May through early August and fruits in early fall.

This species occurs in pond cypress savannas, shallows and edges of cypress/pond pine sloughs, and wet pine savannas. The groundwater table must not be altered to maintain this species. Populations of Canby's dropwort that potentially occur on the project site would likely be located near the centers of pond cypress/swamp gum depressions; the species could possibly be found in other shaded alluvial wetland depressions on the site. Depressional areas and shaded wetland areas will be searched for suitability of habitat and for individual specimens of the plant during field surveys conducted in upcoming summer months.

American chaffseed is listed as endangered and is a perennial, erect herb in the figwort family (Scrophulariaceae). It grows to a height of 12 to 31 inches and has large, purplish-yellow tubular flowers. The fruit is a long and narrow capsule, enclosed in a loose-fitting sac-like structure that provides the basis for the common name, chaffseed. Flowering occurs from April to June.

American chaffseed occurs in sandy acidic, seasonally moist to dry soils. It typically occurs in fire-maintained ecosystems, such as the longleaf pine-wiregrass ecosystem of the southeastern coastal plain. American chaffseed seems to require fire for persistence. One of the most serious threats to its continued existence is fire-suppression. While the majority of the site has been and is currently used for pine plantation, there is little on-site evidence to support recent management by prescribed burning method.

The other state listed species is Rafinesque's big-eared bat (*Corynorhinus rafinesquii*). Big eared bats normally roost (and raise young) in dilapidated buildings or tree cavities near water. They also hibernate in winter in similar structure. It is possible maternity roost trees or winter hibernaculum are on the project site within older cypress or tupelo trees, but the proposed mine plan should not affect the wetland areas where those type trees occur. The isolated and small wetland areas that are proposed for impact have been evaluated and no cavity trees were noted.

A final report will be issued upon completion of the plant survey and the potential existence of the listed plants within the planned mine permit area is determined. A copy the US Fish and Wildlife Service official species list and SC DNR list for Williamsburg County is attached with this report.



United States Department of the Interior



FISH AND WILDLIFE SERVICE

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In Reply Refer To:

May 09, 2017

Consultation Code: 04ES1000-2017-SLI-0516

Event Code: 04ES1000-2017-E-01053

Project Name: RDA, LLC

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the

human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
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Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

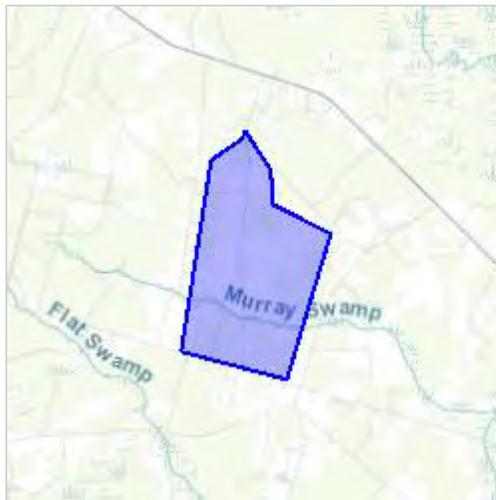
South Carolina Ecological Services
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Project Summary

Consultation Code: 04ES1000-2017-SLI-0516
Event Code: 04ES1000-2017-E-01053
Project Name: RDA, LLC
Project Type: MINING
Project Description: Potential limestone quarry/mine
Project Location:

Approximate location of the project can be viewed in Google Maps:

<https://www.google.com/maps/place/33.48550291258081N79.64289632263979W>



Counties: Williamsburg, SC

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area. Please contact the designated FWS office if you have questions.

Birds

NAME	STATUS
Red-cockaded Woodpecker (<i>Picoides borealis</i>) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered
Wood Stork (<i>Mycteria americana</i>) Population: AL, FL, GA, MS, NC, SC No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8477	Threatened

Fishes

NAME	STATUS
Shortnose Sturgeon (<i>Acipenser brevirostrum</i>) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6635	Endangered

Flowering Plants

NAME	STATUS
American Chaffseed (<i>Schwalbea americana</i>) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1286	Endangered
Canby's Dropwort (<i>Oxypolis canbyi</i>) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7738	Endangered

Critical habitats

There are no critical habitats within your project area.

USFWS National Wildlife Refuges And Fish Hatcheries

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuges or fish hatcheries within your project area.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service³. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

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1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The migratory birds species listed below are species of particular conservation concern (e.g. [Birds of Conservation Concern](#)) that may be potentially affected by activities in this location. It is not a list of every bird species you may find in this location, nor a guarantee that all of the bird species on this list will be found on or near this location. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To view available data on other bird species that may occur in your project area, please visit the [AKN Histogram Tools](#) and [Other Bird Data Resources](#). To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

NAME	SEASON(S)
American Kestrel (<i>Falco sparverius paulus</i>)	On Land: Year-round
Brown-headed Nuthatch (<i>Sitta pusilla</i>)	On Land: Year-round
Least Bittern (<i>Ixobrychus exilis</i>) https://ecos.fws.gov/ecp/species/6175	On Land: Breeding
Mississippi Kite (<i>Ictinia mississippiensis</i>)	On Land: Breeding
Rusty Blackbird (<i>Euphagus carolinus</i>)	On Land: Wintering
Sedge Wren (<i>Cistothorus platensis</i>)	On Land: Wintering
Swainson's Warbler (<i>Limnothlypis swainsonii</i>)	On Land: Breeding
Wood Thrush (<i>Hylocichla mustelina</i>)	On Land: Breeding

Worm Eating Warbler (<i>Helmitheros vermivorum</i>)	On Land: Migrating
Purple Sandpiper (<i>Calidris maritima</i>)	On Land: Wintering
American Bittern (<i>Botaurus lentiginosus</i>) https://ecos.fws.gov/ecp/species/6582	On Land: Wintering
American Oystercatcher (<i>Haematopus palliatus</i>) https://ecos.fws.gov/ecp/species/8935	On Land: Year-round
Black-throated Green Warbler (<i>Dendroica virens</i>)	On Land: Breeding
Chuck-will's-widow (<i>Caprimulgus carolinensis</i>)	On Land: Breeding
Le Conte's Sparrow (<i>Ammodramus leconteii</i>)	On Land: Wintering
Bachman's Sparrow (<i>Aimophila aestivalis</i>) https://ecos.fws.gov/ecp/species/6177	On Land: Year-round
Saltmarsh Sparrow (<i>Ammodramus caudacutus</i>)	On Land: Wintering
Seaside Sparrow (<i>Ammodramus maritimus</i>)	On Land: Year-round
Henslow's Sparrow (<i>Ammodramus henslowii</i>) https://ecos.fws.gov/ecp/species/3941	On Land: Wintering
Kentucky Warbler (<i>Oporornis formosus</i>)	On Land: Breeding
Painted Bunting (<i>Passerina ciris</i>)	On Land: Breeding
Prairie Warbler (<i>Dendroica discolor</i>)	On Land: Breeding
Prothonotary Warbler (<i>Protonotaria citrea</i>)	On Land: Breeding
Fox Sparrow (<i>Passerella iliaca</i>)	On Land: Wintering
Swallow-tailed Kite (<i>Elanoides forficatus</i>) https://ecos.fws.gov/ecp/species/8938	On Land: Breeding
Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	On Land: Year-round
Red Knot (<i>Calidris canutus rufa</i>) https://ecos.fws.gov/ecp/species/1864	On Land: Wintering
Bald Eagle (<i>Haliaeetus leucocephalus</i>) https://ecos.fws.gov/ecp/species/1626	On Land: Year-round
Black Rail (<i>Laterallus jamaicensis</i>) https://ecos.fws.gov/ecp/species/7717	On Land: Breeding

Gull-billed Tern (<i>Gelochelidon nilotica</i>) https://ecos.fws.gov/ecp/species/9501	On Land: Breeding
Lesser Yellowlegs (<i>Tringa flavipes</i>) https://ecos.fws.gov/ecp/species/9679	On Land: Wintering
Loggerhead Shrike (<i>Lanius ludovicianus</i>) https://ecos.fws.gov/ecp/species/8833	On Land: Year-round
Marbled Godwit (<i>Limosa fedoa</i>) https://ecos.fws.gov/ecp/species/9481	On Land: Wintering
Peregrine Falcon (<i>Falco peregrinus</i>) https://ecos.fws.gov/ecp/species/8831	On Land: Wintering
Short-eared Owl (<i>Asio flammeus</i>) https://ecos.fws.gov/ecp/species/9295	On Land: Wintering
Yellow Rail (<i>Coturnicops noveboracensis</i>) https://ecos.fws.gov/ecp/species/9476	On Land: Wintering

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
 - Conservation measures for birds
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
 - Year-round bird occurrence data
<http://www.birdscanada.org/birdmon/default/datasummaries.jsp>
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Rare, Threatened, and Endangered Species and Communities Known to Occur in Williamsburg County

June 11, 2014

Scientific Name	Common Name	USESA Designation	State Protection	Global Rank	State Rank
<u>Vertebrate Animals</u>					
<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat		SE: Endangered	G3G4	S2?
<i>Picoides borealis</i>	Red-cockaded Woodpecker	LE: Endangered	SE: Endangered	G3	S2
<i>Sciurus niger</i>	Eastern Fox Squirrel			G5	S4
<u>Animal Assemblage</u>					
Waterbird Colony				GNR	SNR
<u>Vascular Plants</u>					
<i>Amphicarpum muehlenbergianum</i>	Blue Maiden-cane			G4	S2S3
<i>Andropogon mohrii</i>	Broomsedge			G4?	S2
<i>Castilleja coccinea</i>	Scarlet Indian-paintbrush			G5	S2
<i>Coreopsis gladiata</i>	Southeastern Tickseed			G4G5	SNR
<i>Cystopteris protrusa</i>	Lowland Brittle Fern			G5	S2
<i>Fimbristylis vahlii</i>	Vahl Fimbry			G5	S1
<i>Galearis spectabilis</i>	Showy Orchis			G5	S3
<i>Gentiana autumnalis</i>	Pine Barren Gentian			G3	S2
<i>Helenium pinnatifidum</i>	Southeastern Sneezeweed			G4	S2
<i>Hottonia inflata</i>	Featherfoil			G4	S1
<i>Hydrolea corymbosa</i>	Corymb Fiddleleaf			G5	S1
<i>Hypericum harperi</i>	Harper's St. John's-wort			G3G4	S2
<i>Ilex amelanchier</i>	Sarvis Holly			G4	S3
<i>Lachnocaulon beyrichianum</i>	Southern Bog-button			G4	S2
<i>Lipocarpa micrantha</i>	Dwarf Bulrush			G5	S2
<i>Lobelia boykinii</i>	Boykin's Lobelia			G2G3	S3
<i>Macbridea caroliniana</i>	Carolina Bird-in-a-nest			G2G3	S3
<i>Oxypolis canbyi</i>	Canby's Dropwort	LE: Endangered		G2	S2
<i>Physostegia leptophylla</i>	Slender-leaved Dragon-head			G4?	SNR
<i>Platanthera integra</i>	Yellow Fringeless Orchid			G3G4	S1
<i>Polygala hookeri</i>	Hooker's Milkwort			G3	S1
<i>Polygala nana</i>	Dwarf Milkwort			G5	S1
<i>Pteroglossaspis ecristata</i>	Crestless Plume Orchid			G2G3	S2
<i>Rhexia aristosa</i>	Awed Meadowbeauty			G3G4	S3
<i>Rhexia cubensis</i>	West Indian Meadow-beauty			G4G5	S1
<i>Rhynchospora breviseta</i>	Short-bristle Baldrush			G3G4	S1

Scientific Name	Common Name	USES Designation	State Protection	Global Rank	State Rank
<i>Schwalbea americana</i>	Chaffseed	LE: Endangered		G2G3	S2
<i>Sideroxylon lanuginosum</i>	Gum Bumelia			G4G5	S1
<i>Sideroxylon reclinatum</i>	Gum Bully			G4G5	S1
<i>Spiranthes longilabris</i>	Giant Spiral Ladies'-tresses			G3	S1
<i>Xyris difformis</i> var. <i>floridana</i>	Florida Yellow-eyed Grass			G5T4T5	S2
<i>Xyris serotina</i>	Acid-swamp Yellow-eyed Grass			G3G4	S1
<i>Xyris stricta</i>	Pineland Yellow-eyed Grass			G4	S1
<u>Nonvascular Plant</u>					
<i>Plagiochila sullivanii</i>				G2	SNR
<u>Communities</u>					
Limestone sink				G3	S1S2
Pine flatwoods				G5	S3S4
Pine savanna				G3	S2
<i>Pinus palustris</i> - <i>pinus serotina</i> / <i>ctenium aromaticum</i> - <i>muhlenbergia expansa</i> - <i>carpophorus odoratissimus</i> woodland	Longleaf Pine / Pond Pine Savanna, Wet Spodosol Variant			G3	SNR