White-tailed Kite

This species was not observed during these surveys. Suitable nesting sites (treetops) were identified in the study area for the white tailed kite. This is an obvious, vocal species during the breeding season, and the lack of observations indicates the white-tailed kite did not nest in the study area during the 2003 breeding season.

Northern Harrier

The northern harrier typically nests in extensive grasslands or marshes, but also will nest in coastal sage scrub and riparian habitats. This species was not observed during the surveys.

Barn Owl

Barn owls nest in cavities, which can be natural (trees) or artificial (abandoned buildings). No suitable nesting cavities in the trees in the study area were observed during the surveys, and no buildings or other structures are present in the study area. This species was not observed during the surveys.

Conclusions

During the 2003 raptor nesting season, no raptor nests were observed within 500 feet of the pipeline route; therefore, nesting raptors would not present a project constraint at this time. However, if construction would occur during the raptor nesting season (February 1 to June 30), it is recommended that a follow-up raptor nesting survey be conducted approximately seven days prior to commencement of construction to confirm the absence of nests within 500 feet of the pipeline route.

BonTerra Consulting has appreciated the opportunity to assist on this project. If you have any comments or questions, please call Amber Oneal at (714) 444-9199.

Sincerely,

BONTERRA CONSULTING

Ann M. Johnston
Principal, Biological Services

Amber S. Oneal
Project Manager/Ecologist

Enclosures: Exhibits 1 and 2

cc: Brian Leatherman, White-Leatherman BioServices

R:\Projects\RBFJ144\Raptor Survey-092603.doc

References:

American Ornithologists' Union. 1998. *Check-list of North American Birds, 7th ed.* American Ornithologists' Union, Washington, D.C.

Garrett, K. and J. Dunn. 1981. *Birds of Southern California: Status and Distribution.* Los Angeles Audubon Society, Los Angeles.

Grinnell, J. and A.H. Miller. 1944. *The Distribution of the Birds of California.* Pacific Coast Avifauna 27 (reprinted 1986 by Artemisia Press, Lee Vining, Calif.).

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August 28, 2003

Mr. Alan Ashimine
RBF Consulting
14725 Alton Parkway
Irvine, California 92618-2027

VIA FACSIMILE AND OVERNIGHT
(949) 837-4122

Subject: Spring Botanical Survey for the Carbon Canyon Project Site, Orange County, California

Dear Mr. Ashimine:

This letter report presents the findings of the spring botanical survey for the Carbon Canyon project site in Orange County (hereafter referred to as the project site). The purpose of the botanical survey was to identify special status plant species on the project site and associated study area.

Project Location and Description

The project site is located in Carbon Canyon Regional Park near the cities of Brea and Yorba Linda in unincorporated Orange County (Exhibit 1). The project site is generally bound by Carbon Canyon Road (Highway 142) to the north, Rose Drive to the west, and open space within Carbon Canyon Regional Park to the south and east (Exhibit 2). Elevations on the project site range from approximately 420 to 525 feet above mean sea level (msl). Land uses in the vicinity include agriculture, oil drilling, residential development, Carbon Canyon Dam, and open space within Carbon Canyon Park.

Native vegetation types present on the project site include coastal sage scrub, chaparral, and willow riparian forest. Although many of the native areas have scattered ornamentals, they are still considered high quality habitats. Non-native vegetation types include annual grassland, ornamental, irrigated row and field crops, and other disturbed and developed areas.

Survey Methods

Prior to the field survey, a literature review was conducted to identify special status plants or vegetation types known from the project site and vicinity. This included a review of the California Natural Diversity Data Base (CNDDB)(CDFG 2003a) and California Native Plant Society's (CNPS) *Electronic Inventory* (2003). In addition, compendia of special status species published by the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) were reviewed (USFWS 1999; CDFG 2003b). All species identified by this literature review, as well as others known from the general region, are included in Table 1. This table lists special status plants known from comparable habitats in the region and summarizes their listing status, and occurrence probability on the project site.

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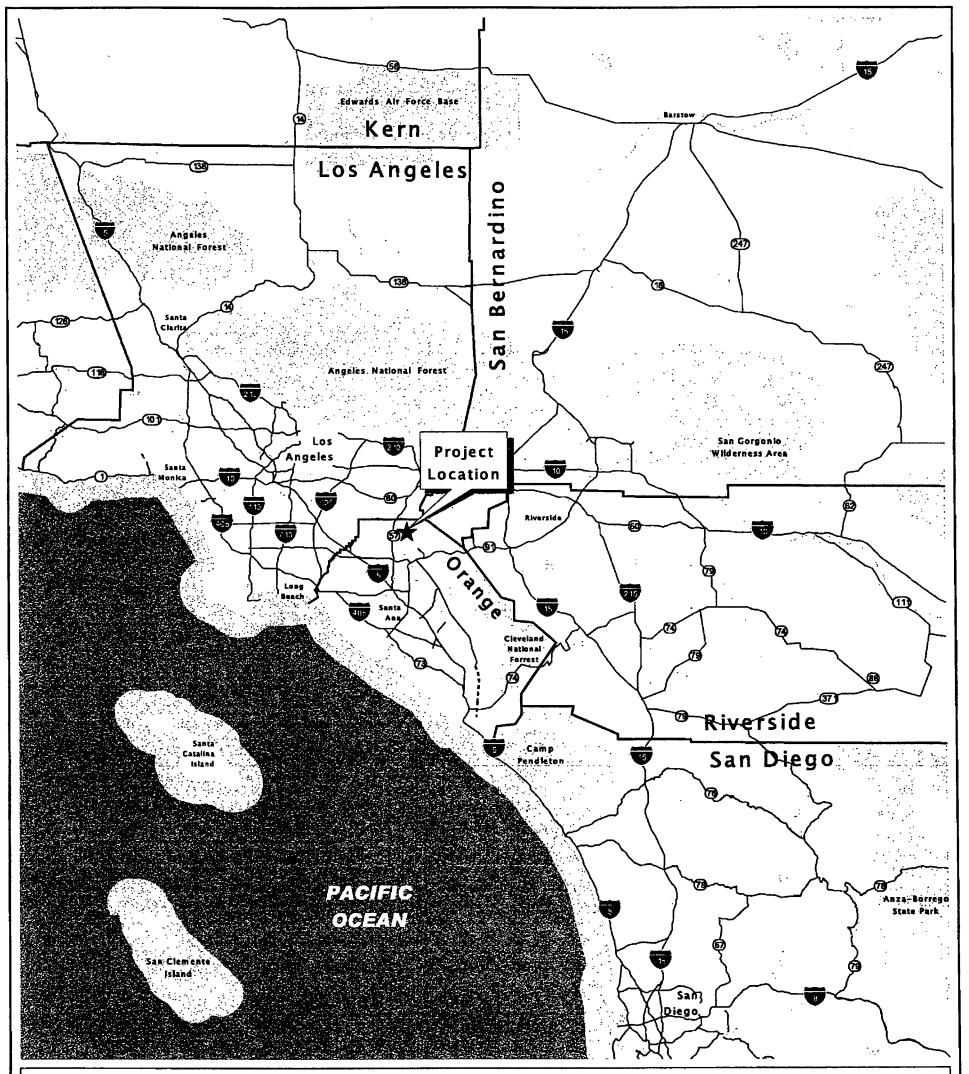

Regional Location

Exhibit 1

Carbon Canyon

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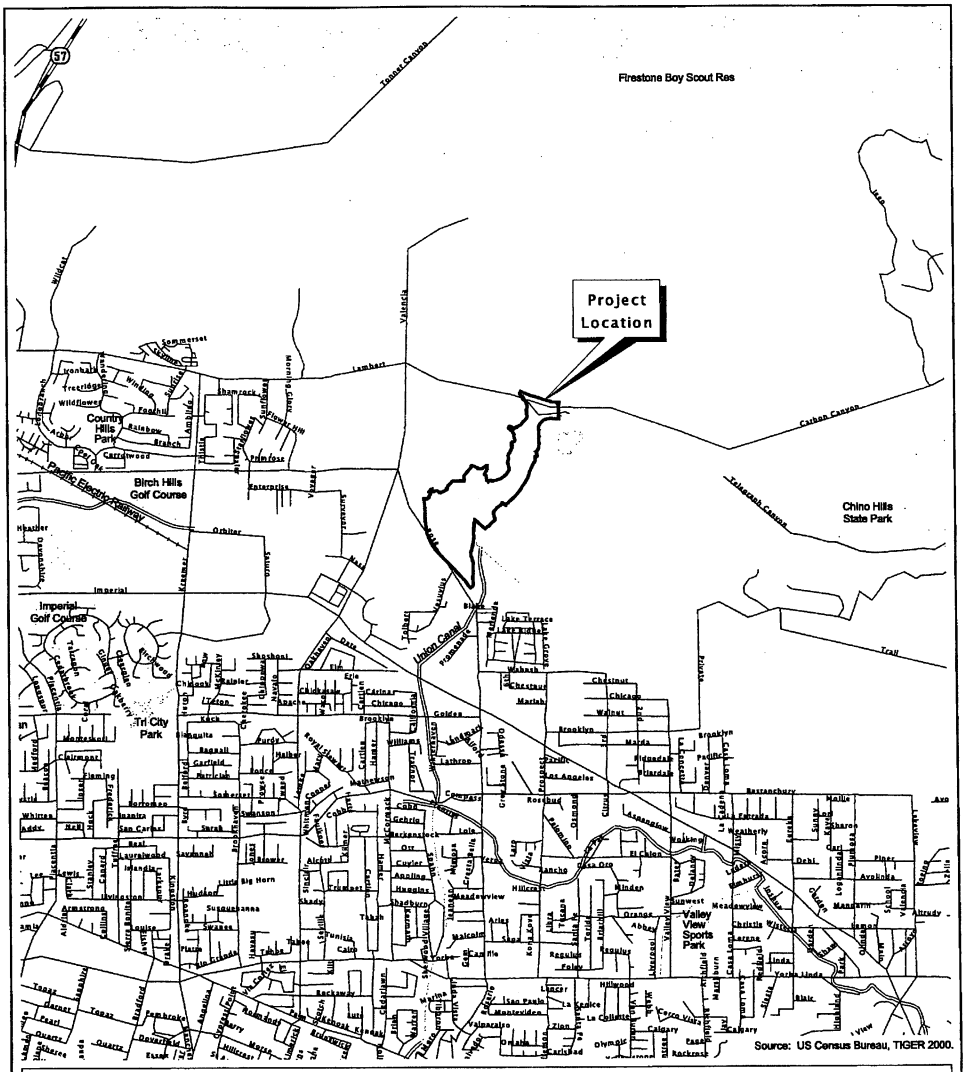

Local Vicinity

Exhibit 2

Carbon Canyon

N W E S

0.25 0 0.25 0.5 Miles

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All plant species observed were identified in the field or collected for later identification. Plants were identified using keys, descriptions, and illustrations in Hickman (1993), Munz (1974), Abrams (1923, 1960), and other regional references. All species noted on the site are listed in Attachment A. In conformance with CDFG guidelines (2000), surveys were (a) conducted during flowering seasons for the special status plants known from the area, (b) floristic in nature, (c) consistent with conservation ethics, (d) systematically covered all habitat types on the site, and (e) well documented, by this report and by voucher specimens to be deposited at Rancho Santa Ana Botanic Garden. Reference populations were monitored to determine the appropriate survey time.

Sandy Leatherman, Senior Biologist, and Amber Oneal, Ecologist, from BonTerra Consulting visited the project site on April 24 and June 16, 2003. Surveys were conducted using meandering transects. Field notes were taken during the survey. If found, the location of each population of special status species would have been mapped, and voucher specimens would have been be collected and deposited in an appropriate herbarium to ensure accuracy in the identification.

Background

Seven CNPS List 1B species (considered Rare and Endangered in California by the CNPS) were determined to have potential to occur on the project site. Background information on these species is provided below.

Chaparral Sand-verbena (*Abronia villosa* var. *aurita*)

Chaparral sand-verbena is a CNPS List 1B species that typically blooms between January and August. This variety is generally restricted to inland valleys of western Riverside County, although there are some known localities in Orange and San Diego counties. It is found in areas of fine sand, often on benches of alluvial habitats, but also in openings of scrub or grassland vegetation types. In the project vicinity, this species is known from Lake Elsinore, Newport Beach, Atwood, and Anaheim. Although chaparral sand-verbena has a low potential to occur on the project site, this species was not observed during focused surveys.

Coulter's Saltbush (*Atriplex coulteri*)

Coulter's saltbush is a CNPS List 1B species that generally blooms from March to October. It is a low perennial, generally associated with alkaline and semi alkaline soils and clay barrens in grassland or open coastal sage scrub habitats, or soils bordering alkaline wetlands at low elevations. Coulter's saltbush is known from Santa Barbara County south to San Diego County, the Channel Islands, and northwestern Baja California, Mexico. Recent reports of this plant include locations at the Dana Point Headlands, Newport Beach, and Cristianitos Canyon in Orange County. The CNDDB reports one old population (1917) along Chino Creek within the adjacent Prado Dam 7.5 minute quadrangle (CDFG 2003a). Coulter's saltbush has a low potential to occur on the project site, this species was not observed during focused surveys.

Plummer's Mariposa Lily (*Calochortus plummerae*)

Plummer's mariposa lily is a CNPS List 1B species. This species occurs in chaparral, coastal sage scrub, grassland, woodlands, and pine forest vegetation types. This species occurs in the mountains and foothills of Los Angeles, Orange, Riverside, and San Bernardino counties (the San Gabriel, San Bernardino, San Jacinto, Santa Ana, and Santa Monica mountains) at elevations up to about 5,600 feet above msl. Plummer's mariposa lily has potential to occur on the project site, this species was not observed during focused surveys.

Intermediate Mariposa Lily (*Calochortus weedii* var. *intermedius*)

Intermediate mariposa lily is a CNPS List 1B species. This species is found from sea level to about 2,000 feet above msl in chaparral, coastal sage scrub, and rocky outcrops. Most occurrences are in the foothills of Orange County (Santa Ana Mountains), but this species also occurs inland in Los Angeles and Riverside counties. There are several records within a few miles of the project site. Intermediate mariposa lily has potential to occur on the project site, this species was not observed during focused surveys.

Smooth Tarplant (*Centromadia pungens* ssp. *laevis*)

Smooth tarplant is a CNPS List 1B species that typically blooms between April and September. This annual herb, formerly *Hemizonia pungens* ssp. *laevis*, is historically known from San Bernardino, Riverside, and San Diego counties with a few localities in Orange and Los Angeles counties. Currently, the majority of the populations of this species occur in damp alkaline areas throughout inland Riverside County, often found in fallow fields and beside old irrigation ditches. Smooth tarplant has a low potential to occur on the project site, this species was not observed during focused surveys.

Many-stemmed Dudleya (*Dudleya multicaulis*)

Many-stemmed dudleya is a CNPS List 1B species. This species typically blooms between May and July, and dies back to the ground after flowering. It is found from sea level to approximately 2,000 feet above msl in clay or cobble barrens, rocky places, or other open places in coastal sage scrub, chaparral, or native perennial grasslands. There are several occurrences within a few miles of the project site. Many-stemmed dudleya has potential to occur on the project site, this species was not observed during focused surveys.

Robinson's Peppergrass (*Lepidium virginicum* var. *robinsonii*)

Robinson's peppergrass is a CNPS List 1B species. This species occurs in chaparral and coastal sage scrub in western California, from Santa Cruz County to Baja California, Mexico and inland to western Riverside and San Bernardino counties. CDFG (2003a) erroneously reports it as "historic," meaning that no occurrences have been documented in recent years; however, it has been collected in the Santa Ana Mountains and Inland Empire numerous times in the past two decades (White, 2003ab; specimens at UCR and Rancho Santa Ana Botanic Garden Herbaria). Robinson's peppergrass has been documented within a few miles of the project site, near Anaheim and Yorba Linda (CDFG 2003a). Robinson's peppergrass has potential to occur in the study area. This species was not observed during focused surveys.

Survey Results

Only one special status plant, the southern California black walnut (*Juglans californica*), was observed on the project site. This species is a CNPS List 4 species, which is a species of limited distribution. This species is endemic to southwestern California, from Santa Barbara to San Diego County, and inland to western San Bernardino and Riverside counties. On the project site, it is scattered within the annual grassland. If possible, these trees should be avoided.

BonTerra Consulting has appreciated the opportunity to assist on this project. If you have any comments or questions, please call Amber Oneal at (714) 444-9199.

Sincerely,

BONTERRA CONSULTING

Ann M Johnston
Principal, Biological Services

Sandra J. Leatherman
Senior Biologist

Enclosures: Exhibits 1 and 2
Attachment A

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References and Other Literature

Abrams, L. 1923-1951. *Illustrated Flora of the Pacific States*, Volumes. I, II, and III. Stanford University Press, Stanford, California.

Abrams, L. & R. Ferris. 1960. *Illustrated Flora of the Pacific States.* Volume IV. Stanford University Press, Stanford, California.

California Department of Fish and Game. 2000. Guidelines for assessing the effects of proposed projects on rare, threatened, and endangered plants and plant communities. Unpublished. California Department of Fish and Game, Sacramento, California.

California Department of Fish and Game. 2003a. California Natural Diversity Data Base. Sacramento.

California Department of Fish and Game. 2003b. Special plants. Heritage section, California Department of Fish and Game, Sacramento.

California Native Plant Society. 2003. Electronic inventory of rare and endangered vascular plants of California. CNPS, Sacramento, California.

Hickman, J.C. 1993. *The Jepson Manual: Higher Plants of California.* University of California Press, Berkeley, California.

Munz, P.A. 1974. *A Flora of Southern California.* University of California Press, Berkeley, California.

U.S. Fish and Wildlife Service. 1999. Endangered and threatened wildlife and plants; review of plant and animal taxa that are candidates or proposed for listing as endangered or threatened. Federal Register 64:57534-57547 (25 Oct).

White, S.D. No date a. Flora of the San Jacinto Mountains. Working draft manuscript.

White, S.D. No date b. Flora of the Inland Empire. Working draft manuscript.

TABLE 1
SPECIAL STATUS PLANT SPECIES
KNOWN TO OCCUR IN THE PROJECT REGION

Species	Status			Likelihood for Occurrence	Survey Results
	USFWS	CDFG	CNPS		
Abronia villosa var. *aurita* Chaparral sand-verbena	–	–	List 1B	Low potential to occur	Not observed
Astragalus brauntonii Braunton's milk-vetch	FE	–	List 1B	Not expected to occur; lack of suitable habitat/associated species	Not observed
Atriplex coulteri Coulter's saltbush	–	–	List 1B	Low potential to occur	Not observed
Atriplex pacifica South coast saltscale	–	–	List 1B	Not expected to occur; lack of suitable habitat	Not observed
Atriplex parishii Parish's brittlescale	–	–	List 1B	Not expected to occur; lack of suitable habitat	Not observed
Atriplex serenana var. *davidsonii* Davidson's saltbush	–	–	List 1B	Not expected to occur; lack of suitable habitat	Not observed
Calochortus catalinae Catalina mariposa lily	–	–	List 4	Potential to occur	Not observed
Calochortus plummer Plummer's mariposa lily	–	–	List 1B	Potential to occur	Not observed
Calochortus weedii var. *intermedius* Intermediate mariposa lily	–	–	List 1B	Potential to occur	Not observed
Calystegia sepium binghamiae Santa Barbara morning-glory	–	–	List 1A	Not expected to occur; lack of suitable habitat	Not observed
Centromadia parryi ssp. *australis* Southern tarplant	–	–	List 1B	Not expected to occur; lack of suitable habitat	Not observed
Centromadia pungens ssp. *laevis* Smooth tarplant	–	–	List 1B	Low potential to occur	Not observed
Convolvulus simulans Small-flowered morning-glory	–	–	List 4	Potential to occur	Not observed
Dudleya multicaulis Many-stemmed dudleya	–	–	List 1B	Potential to occur	Not observed

TABLE 1 (continued)
SPECIAL STATUS PLANT SPECIES
KNOWN TO OCCUR IN THE PROJECT REGION

Species	Status			Likelihood for Occurrence	Survey Results
	USFWS	CDFG	CNPS		
Eriastrum densiflorum ssp. *sanctorum* Santa Ana River woollystar	FE	SE	List 1B	Not expected to occur; lack of suitable habitat	Not observed
Harpagonella palmeri Palmer's grapplinghook	–	–	List 4	Potential to occur	Not observed
Helianthus nuttallii ssp. *parishii* Los Angeles sunflower	–	–	List 1A	Not expected to occur; lack of suitable habitat	Not observed
Holocarpha virgata ssp. *elongata* Graceful tarplant	–	–	List 4	Potential to occur	Not observed
Hordeum intercedens Vernal barley	–	–	List 3	Potential to occur	Not observed
Juglans californica var. *californica* Southern California walnut	–	–	List 4	Observed on the project site	Observed
Lepidium virginicum var. *robinsonii* Robinson's peppergrass	–	–	List 1B	Potential to occur	Not observed
Microseris douglasii var. *platycarpha* Small-flowered microseris	–	–	List 4	Potential to occur	Not observed
Pentachaeta aurea Golden-rayed pentachaeta	–	–	List 4	Potential to occur	Not observed
Piperia cooperii Chaparral rein orchid	–	–	List 4	Not expected to occur; lack of suitable habitat	Not observed
Polygala cornuta var. *fishiae* Fish's milkwort	–	–	List 4	Not expected to occur; lack of suitable habitat	Not observed
Romneya coulteri Matilija poppy	–	–	List 4	Potential to occur	Not observed
Senecio aphinactis Rayless ragwort	–	–	List 2	Potential to occur	Not observed
Sidalcea neomexicana Salt spring checkerbloom	–	–	List 2	Not expected to occur; lack of suitable habitat	Not observed

TABLE 1 (continued)
SPECIAL STATUS PLANT SPECIES
KNOWN TO OCCUR IN THE PROJECT REGION

Species	Status			Likelihood for Occurrence	Survey Results
	USFWS	CDFG	CNPS		
STATUS DEFINITIONS					
USFWS					
FE: Species designated as Endangered under the federal Endangered Species Act. Endangered = "any species in danger of extinction throughout all or a significant portion of its range."					
FT: Species designated as threatened under the Federal Endangered Species Act. Threatened = "species likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range."					
FPE: Proposed for federal listing as Endangered.					
FPT: Proposed for federal listing as Threatened.					
C: Candidate for federal listing as Threatened or Endangered.					
CDFG					
ST: Threatened = "a species that, although not presently threatened with extinction, is likely to become an Endangered species in the foreseeable future in the absence of the special protection and management efforts required by the Act" (California Endangered Species Act).					
SE: Endangered = "a species is endangered when its prospects of survival and reproduction are in immediate jeopardy from one or more causes."					
CNPS					
1A Plants Presumed Extinct in California					
1B Plants Rate, Threatened, or Endangered in California and Elsewhere					
2 Plants Rare, Threatened, or Endangered in California But More Common Elsewhere					
3 Plants About Which We Need More - A Review List					
4 Plants of Limited Distribution - A Watch List					

BonTerra CONSULTING

FAX COVER SHEET

DATE: August 28, 2003

TO: Alan Ashimine
RBF Consulting

FAX NUMBER: (949) 837-4122
CLIENT CODE:
PROJECT CODE:

FROM: Ann M. Johnston

PAGES: 10 (incl cover sheet)

REGARDING: Carbon Canyon Botanical Survey

MESSAGE:

151 Kalmus Drive, Suite E-200 Costa Mesa, CA 92626 (714) 444-9199 (714) 444-9599 Fax

****
*** TX REPORT ***
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TRANSMISSION OK

TX/RX NO	0675
CONNECTION TEL	19498374122
CONNECTION ID	
ST. TIME	08/28 16:12
USAGE T	03'41
PGS. SENT	10
RESULT	OK

ATTACHMENT A
PLANT SPECIES OBSERVED ON THE CARBON CANYON PROJECT SITE

INTRODUCTION TO FLORAL COMPENDIA

Floral components identified during surveys were recorded in terms of relative abundance and host habitat type. Floral taxonomy used in this report follows the Jepson Manual (Hickman 1993) and, for sensitive species, the California Native Plant Society Rare Plant Inventory, 5th Edition (Skinner and Pavlik 1994). Additional common plant names are taken from Munz (1974), Beauchamp (1986), Roberts (1989), Reed (1988), Abrams (1923, 1944), and Abrams and Ferris (1951, 1960).

Species
***ANGIOSPERMAE* - FLOWERING PLANTS**
DICOTYLEDONES
ANACARDIACEAE - SUMAC FAMILY
Malosma laurina laurel sumac
Schinus molle Peruvian pepper tree
Schinus terebinthifolius Brazilian pepper tree
APIACEAE (UMBELLIFERAE) - CARROT FAMILY
Conium maculatum poison hemlock
Foeniculum vulgare sweet fennel
ASTERACEAE (COMPOSITAE) - SUNFLOWER FAMILY
Ambrosia psilostachya Western ragweed
Artemisia californica California sagebrush
Artemisia douglasiana mugwort
Baccharis salicifolia mule fat
Carduus pycnocephalus Italian thistle
Centaurea melitensis tocalote
Conyza canadensis common horseweed
Encelia californica *bush sunflower*
Gutierrezia microcephala sticky snakeweed
Hedypnois cretica Crete hedypnois
Hemizonia fasciculata fascicled tarweed
Heterotheca grandiflora telegraph weed
Hypochaeris glabra smooth cat's ear
Isocoma menziesii coastal goldenbush
Lactuca serriola prickly lettuce
Osteospermum ecklonis trailing African daisy

ATTACHMENT A
PLANT SPECIES OBSERVED ON THE CARBON CANYON PROJECT SITE

Picris echioides bristly ox tongue
Silybum marianum milk thistle
Sonchus oleraceus common sow-thistle
BORAGINACEAE - BORAGE FAMILY
Amsinckia menziesii rancher's fiddleneck
BRASSICACEAE (CRUCIFERAE) - MUSTARD FAMILY
Brassica nigra black mustard
Brassica rapa field mustard
Hirschfeldia incana shortpod mustard
Raphanus sativus wild radish
CACTACEAE - CACTUS FAMILY
Opuntia littoralis coastal prickly pear
CAPRIFOLIACEAE - HONEYSUCKLE FAMILY
Sambucus mexicana Mexican elderberry
CARYOPHYLLACEAE - PINK FAMILY
Silene gallica windmill pink / common catchfly
CHENOPODIACEAE - GOOSEFOOT FAMILY
Atriplex semibaccata Australian saltbush
Chenopodium album lamb's quarters
Salsola tragus Russian thistle
CONVOLVULACEAE - MORNING-GLORY FAMILY
Calystegia macrostegia morning-glory
Convolvulus arvensis field bindweed
Cuscuta californica California witch's hair
CRASSULACEAE - STONECROP FAMILY
Crassula connata sand pigmy-stonecrop
CUCURBITACEAE - GOURD FAMILY
Cucurbita foetidissima coyote melon / calabazilla
Marah macrocarpus wild cucumber / cucamonga manroot
EUPHORBIACEAE -SPURGE FAMILY
Eremocarpus setiger doveweed
Euphorbia sp. spurge
FABACEAE (LEGUMINOSAE) - LEGUME/PEA FAMILY
Lotus salsuginosus alkali lotus
Lupinus bicolor miniature lupine

ATTACHMENT A
PLANT SPECIES OBSERVED ON THE CARBON CANYON PROJECT SITE

Lupinus succulentus arroyo lupine
Medicago polymorpha bur-clover
Melilotus indica yellow sweet-clover
GERIANIACEAE - GERANIUM FAMILY
Erodium cicutarium red-stemmed filaree
HYDROPHYLLACEAE - WATERLEAF FAMILY
Eucrypta chrysanthemifolia common eucrypta
Phacelia cicutaria caterpillar phacelia
Pholistoma auritum fiesta flower
LAMIACEAE (LABIATAE) - MINT FAMILY
Marrubium vulgare common horehound
MALVACEAE - MALLOW FAMILY
Malva parviflora cheeseweed
MORACEAE - FIG FAMILY
Ficus carica edible fig / common fig
MYRTACEAE - MYRTLE FAMILY
Eucalyptus sp. gum
OXALIDACEAE - WOOD-SORREL FAMILY
Oxalis pes-caprae Bermuda buttercup / sour grass
PLATANACEAE - SYCAMORE FAMILY
Plantanus racemosa Western sycamore
POLYGONACEAE - BUCKWHEAT FAMILY
Eriogonum fasciculatum California buckwheat
PRIMULACEAE - PRIMROSE FAMILY
Anagallis arvensis scarlet pimpernel
ROSACEAE - ROSE FAMILY
Heteromeles arbutifolia toyon / christmas berry
RUBIACEAE - MADDER FAMILY
Galium aparine common bedstraw
SALICACEAE - WILLOW FAMILY
Salix lasiolepis arroyo willow
SCROPHULARIACEAE - FIGWORT FAMILY
Castilleja exserta purple owl's clover
SOLANACEAE - NIGHTSHADE FAMILY
Nicotiana glauca tree tobacco
Solanum douglasii Douglas' nightshade
URTICACEAE - NETTLE FAMILY
Urtica dioica hoary nettle

ATTACHMENT A
PLANT SPECIES OBSERVED ON THE CARBON CANYON PROJECT SITE

VERBENACEAE - VERVAIN FAMILY
Verbena lasiostachys Western verbena
***MONOCOTYLEDONES* - MONOCOTS**
LILIACEAE - LILY FAMILY
Dichlostemma capitatum blue dicks
POACEAE - GRASS FAMILY
Arundo donax giant reed
Avena barbata slender wild oat
Bromus diandrus ripgut brome
Bromus hordeaceus soft chess
Bromus madritensis ssp. *rubens* foxtail chess
Cortaderia sp. pampas grass
Cynodon dactylon bermuda grass
Hordeum murinum foxtail barley
Stipa pulchra purple needlegrass
Vulpia myuros rattail fescue
Ricinus communis castor bean

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An Environmental Planning/Resource Management Corporation

DRAFT

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August 27, 2003

Mr. Daniel Marquez
Southern California Field Office
U.S. Fish & Wildlife Service
6010 Hidden Valley Rd.
Carlsbad, CA 92009

VIA FACSIMILE AND MAIL
(760) 431-9624

Subject: Results of Focused Surveys for the Southwestern Willow Flycatcher, Least Bell's Vireo, and Yellow-billed Cuckoo for the Carbon Canyon Pipeline Project, Orange County, California

Dear Mr. Marquez:

This letter reports the results of focused surveys to evaluate the presence or absence of the southwestern willow flycatcher (*Empidonax traillii extimus*), least Bell's vireo (*Vireo bellii pusillus*), and yellow-billed cuckoo (*Coccyzus americanus*) on the Carbon Canyon project site (hereafter referred to as the project site).

Project Location and Description

The project site and its associated study area are located in Carbon Canyon Regional Park near the cities of Brea and Yorba Linda in unincorporated Orange County (Exhibit 1). The project is located in Orange County along the western end of Carbon Canyon Regional Park and through private property between Carbon Canyon Road (Highway 142) and Rose Drive, just east of Valencia Avenue (Exhibit 2). The northern third of the pipeline route is in the basin behind Carbon Canyon Dam, and the southern third is primarily through ruderal habitat and agricultural lands. The middle third of the pipeline would be bored under the northeastern corner of Carbon Canyon Dam.

Elevations on the project site range from approximately 420 to 525 feet above mean sea level (msl). Land uses in the vicinity include agriculture, oil drilling, residential development, water retention (Carbon Canyon Dam), and open space within Carbon Canyon Park.

Native vegetation types include coastal sage scrub, chaparral, and willow riparian forest. Although many of the native areas have scattered ornamentals, they are still considered high quality habitats. Non-native vegetation types include annual grassland, ornamental, irrigated row and field crops, and other disturbed and developed areas.

The southwestern willow flycatcher, least Bell's vireo, and yellow-billed cuckoo breed in riparian habitats. The riparian habitat within the study area is composed of several plant species whose extent varies in patch size, distribution, and density. Dominant

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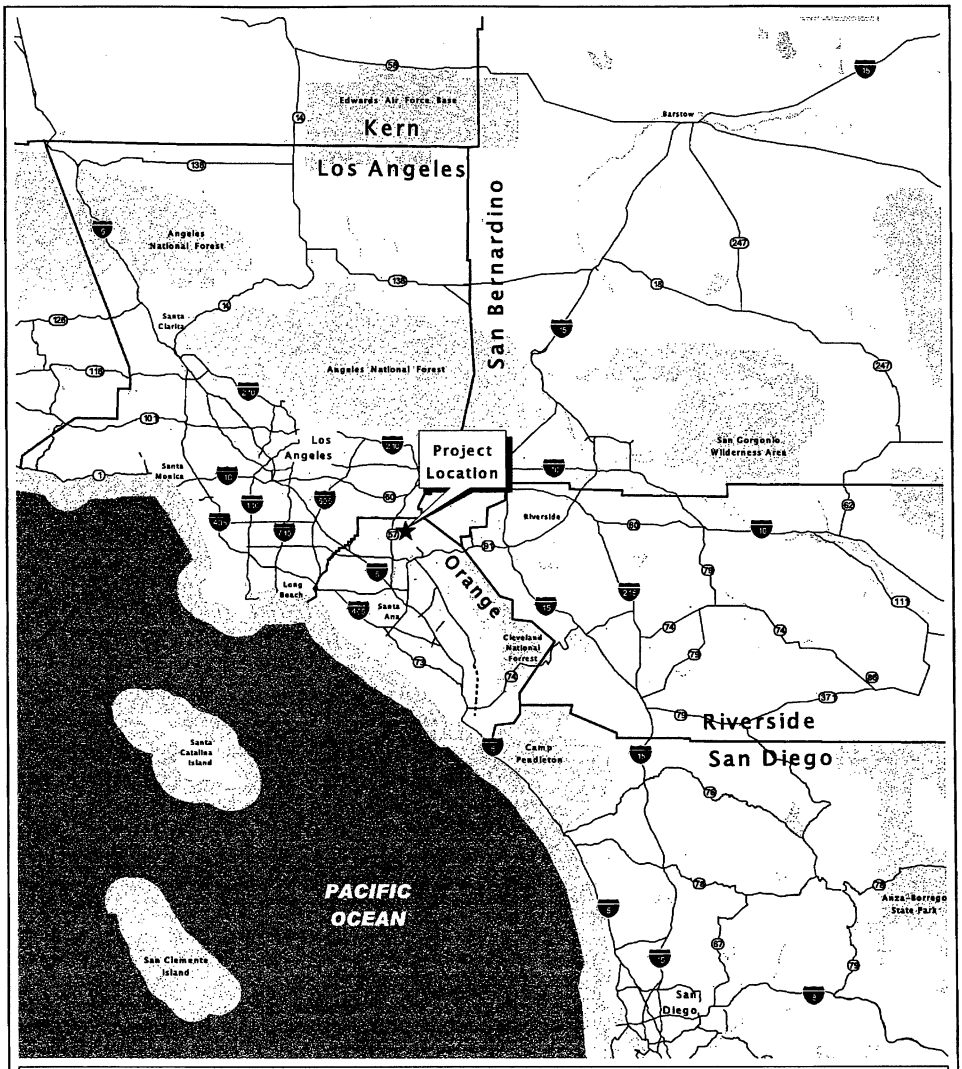

Regional Location

Exhibit 1

Carbon Canyon

N W E S

10 0 10 20 Miles

BonTerra CONSULTING

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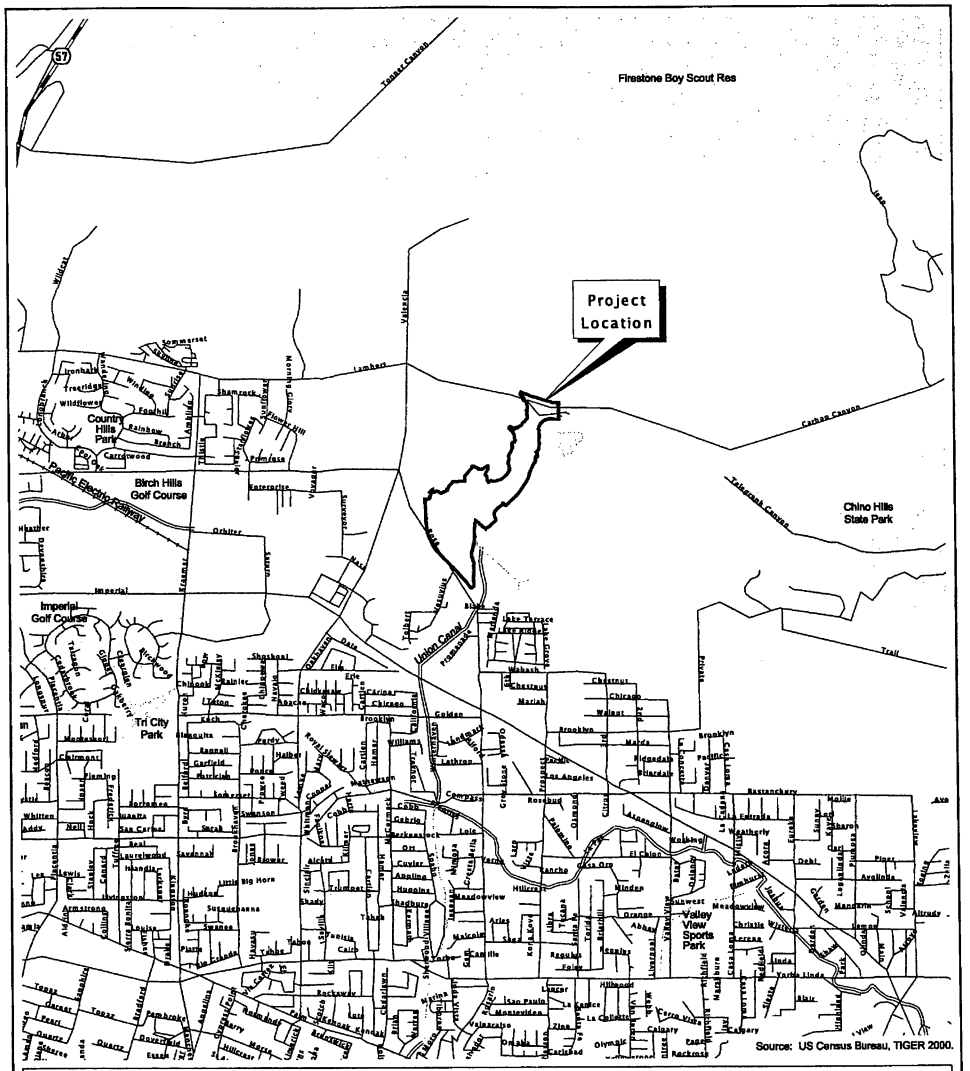

Local Vicinity

Exhibit 2

Carbon Canyon

N W E S

0.25 0 0.25 0.5 Miles

Bonterra CONSULTING

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overstory species include black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), blue gum eucalyptus (*Eucalyptus globulus*), and Peruvian pepper tree (*Schinus molle*). The eucalyptus and pepper trees are non-native. Arroyo willow also occurs as a shrubby tree along habitat edges with Mexican elderberry (*Sambucus mexicana*). Mule fat (*Baccharis salicifolia*) is common in the area along habitat edges and in open disturbed patches. Giant reed (*Arundo donax*) has taken over extensive patches of riparian habitat, including a portion of the habitat within the pipeline route.

The herbaceous layer in the riparian habitat is a mixture of native and non-native annuals. The dominant species are non-native and include short-pod mustard (*Hirschfeldia incana*), wild radish (*Raphanus sativus*), poison hemlock (*Conium maculatum*) and a variety of brome grasses (*Bromus* spp.). Stinging nettle (*Urtica holosericea*) was a common native species.

Background

Southwestern Willow Flycatcher

The willow flycatcher (*Empidonax traillii*) is a state-listed Endangered species, whereas only the southwestern subspecies (*E. t. extimus*) is federally-listed as Endangered (U.S. Fish and Wildlife Service [USFWS] 1995). This survey focused on the southwestern willow flycatcher because it is the only subspecies that nests in southern California. However, migrants of all the subspecies may occur in the area during spring and fall migration, so multiple visits to the survey area are required to determine if individuals observed during the first surveys are breeding resident birds.

The willow flycatcher was formerly a common summer resident in suitable habitat throughout California (Grinnell and Miller 1944). It has now been extirpated as a breeding bird from most of its California range, and is seriously threatened in southern California primarily due to habitat loss and degradation, and brood parasitism by the brown-headed cowbird (*Molothrus ater*) (Garrett and Dunn 1981; USFWS 1995). Critical habitat for the southwestern willow flycatcher was designated in 1997 (USFWS 1997).

The southwestern willow flycatcher closely resembles other *Empidonax* species in California, but the indistinct (or completely lacking) eye ring, broader and longer bill, and generally lighter appearance through the breast and throat help to distinguish it from other species. Knowing the call is the easiest form of identification in the field. Subspecies of the willow flycatcher cannot be separated in the field. The southwestern willow flycatcher is a migratory bird, occurring in this region only during the breeding season (late May to early August). The male arrives later in the spring than most migrants, usually in mid to late May or early June. Nests are constructed in thickets of trees and shrubs in a fork or horizontal branch between three and 15 feet above the ground.

The southwestern willow flycatcher breeds in riparian habitats along rivers, streams, or other wetlands in floodplains and broader canyons, preferring dense riparian thickets near surface water (Sogge et al. 1997), often with adjacent open areas for foraging. Vegetation structure, composition, and extent vary widely but generally include extensive areas dominated by dense stands of willows (*Salix* spp.), mule fat, or other tree species (including tamarisk [*Tamarix* spp.] in some areas), usually with scattered cottonwood (*Populus* spp.) overstory (USFWS 1995). These riparian areas provide both nesting and foraging habitat. Southwestern willow flycatchers will nest in areas with suitable habitat regardless of the elevation (from sea level to high mountains).

Least Bell's Vireo

The least Bell's vireo is a state and federally-listed Endangered species. This subspecies was once widespread throughout the Central Valley and other low elevation riverine areas of California (Grinnell and Miller 1944). The widespread loss of riparian habitat and brood parasitism by the brown-headed cowbird are the major causes of the decline of this species (Garrett and Dunn 1981). About 76 percent of the U. S. population is found in just five localities. The breeding population in California has increased dramatically because of cowbird trapping efforts in breeding areas, and they are thought to be expanding their current range (USFWS 1998). The least Bell's vireo was federally listed in 1986 (USFWS 1986), but critical habitat was not established until 1994 (USFWS 1994).

The least Bell's vireo is a small grayish songbird with indistinct wing bars and facial markings. It is a very vocal species, and can be easily detected from some distance by its unique song, which is given repeatedly. The least Bell's vireo is migratory and only occurs in this region during the breeding season. The males arrive sometime in late March to April and establish breeding territories, and the females arrive shortly thereafter. Nests are constructed (usually in willow trees) only about three to four feet off the ground where the female will lay typically 3 to 4 eggs. The least Bell's vireo usually returns to the wintering grounds sometime in August to September. Preferred habitat is willow riparian woodland that supports dense understory thickets of scrubby willows and mule fat, especially within three to six feet of the ground (USFWS 1998).

Yellow-Billed Cuckoo

The yellow-billed cuckoo is a state-listed Endangered species that was recently considered for federal listing. The USFWS ruled that yellow-billed cuckoos west of the Rocky Mountains and Continental Divide meet the criteria for listing as a distinct population segment and that listing as Threatened is warranted, but precluded by higher priority listing actions (USFWS 2001a). It is therefore currently considered a federal Candidate species (USFWS 2001b).

In California, the yellow-billed cuckoo is a rare summer visitor and breeder where it requires large blocks of riparian habitat for breeding (USFWS 2001a). The yellow-billed cuckoo is a migratory bird, generally occurring in the southwestern United States from May to September (Grinnell and Miller 1944). In southern California, it usually occurs from early June to late August (Garrett and Dunn 1981). Habitat consists almost exclusively of mature streamside gallery forest with old growth willows and scattered cottonwoods (usually of at least 25 acres), particularly with a dense tangled understory of nettles (*Urtica* spp.), willows, blackberry (*Rubus ursinus*), wild grape (*Vitis* spp.), mesquite (*Prosopis* spp.), and other species (Grinnell and Miller 1944; Garrett and Dunn 1981). It is rarely seen away from suitable breeding habitat (Garrett and Dunn 1981). The yellow-billed cuckoo was formerly fairly common and widespread in the broad lower flood plains of larger rivers in southern California and the Central Valley (Garrett and Dunn 1981). Its decline is primarily attributed to widespread habitat loss associated with agriculture, urban development, and flood control projects. The current range of the yellow-billed cuckoo in California is estimated to be about 30 percent of its historical extent, and estimates of the loss of riparian habitat state-wide are as high as 91 percent (USFWS 2001a).

Survey Methods

Prior to conducting the focused surveys, a search was conducted of the most recent version of the California Natural Diversity Data Base (California Department of Fish and Game [CDFG] 2003, Yorba Linda USGS 7.5 minute quadrangle), and other relevant available documents to determine if, and to what extent, the southwestern willow flycatcher, least Bell's vireo, and yellow-billed cuckoo occur on or in the vicinity of the project site. The study area for the proposed project was the pipeline route with a 500-foot buffer area around the pipeline route (Exhibit 3).

All focused surveys were conducted by Brian Leatherman (USFWS permit # TE 827493-3; CDFG MOU), a wildlife biologist with over ten years field experience in southern California. Survey methods followed the guidelines developed by the USFWS for each species as described below. Sightings of the listed species were mapped in the field on a 1 inch=100-feet aerial photograph of the study area. The focus of the surveys was on the detection and identification of the respective target species, but all wildlife incidentally observed or detected on the project site was documented. Identifications were made with the aid of 8 X 42 power Bosch & Lomb Elite binoculars. A list of the species observed during the surveys is included in Attachment A.

Southwestern Willow Flycatcher

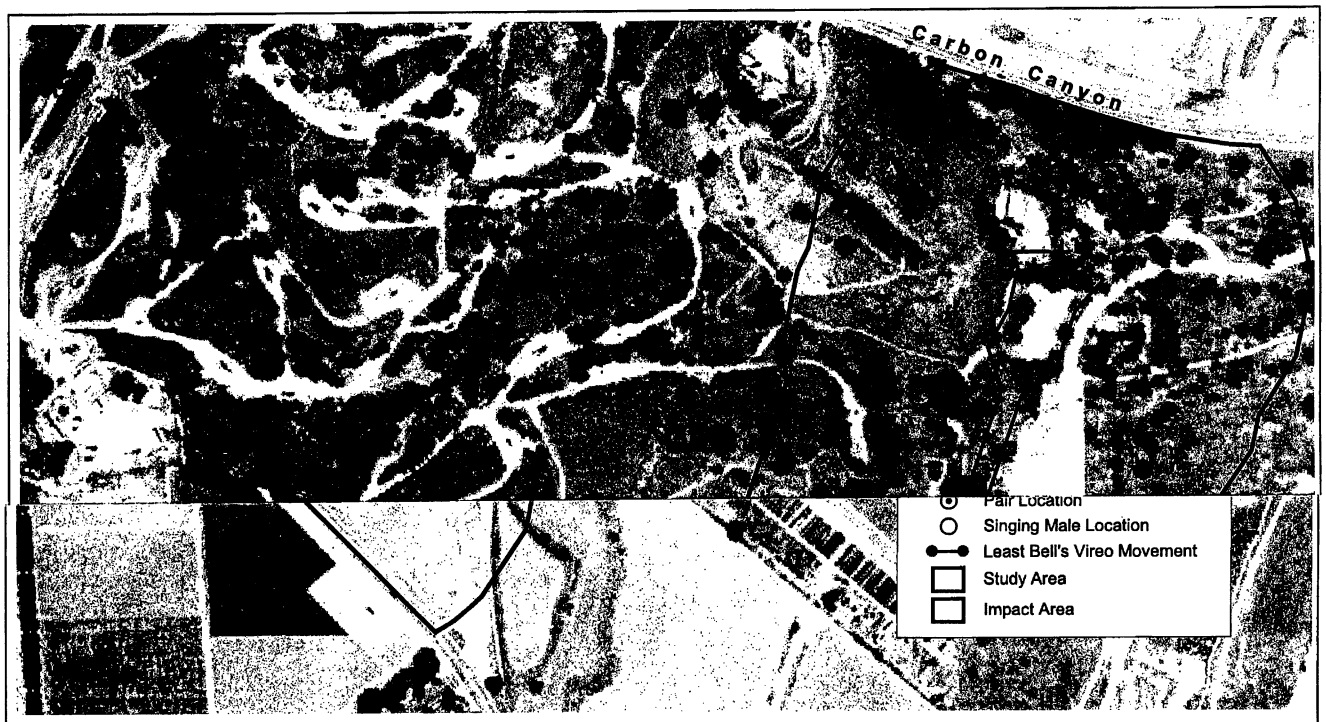
The surveys for the southwestern willow flycatcher followed the mandatory protocol developed by Sogge et. al (1997) and the subsequent addendum protocol developed by the USFWS (2000). The most recent protocol requires that five surveys be conducted within certain periods between May 15 and July 17. Sogge et. al (1997) recommend that surveys be conducted between dawn and 10:00 a.m. under suitable weather conditions. Survey dates, times, and weather data for the focused surveys are shown in Table 1.

Surveys for southwestern willow flycatchers were conducted by walking slowly and methodically within and along the riparian habitat. Taped vocalizations of the southwestern willow flycatcher were played approximately every 50 feet in an attempt to elicit a response from individuals potentially present. The tape was played for roughly 15 seconds, stopped for one or two minutes to listen for a response, and then played again before moving to the next spot.

Table 1
Dates, Times, and Weather Conditions for Focused Willow Flycatcher Surveys

Date	Time	Weather Conditions*
May 15	0600-1200	T(a) = 52 ▶ 68 F; 1-3 mph winds; 0 ▶ 30% cloud cover
June 11	0600-1100	T(a) = 56 ▶ 66 F; 1-3 mph winds; 100% ▶ 90% cloud cover
June 26	0600-1100	T(a) = 59 ▶ 85 F; 1-3 mph winds; clear skies
July 8	0600-1130	T(a) = 63 ▶ 76 F; 0-2 ▶ 1-3 mph winds; 100% overcast ▶ clear but hazy
July 15	0530-1100	T(a) = 62 ▶ 84 F; 0-2 ▶ 1-3 mph winds; 100% overcast ▶ clear

▶ indicates a unidirectional change during survey period
* indicates a range of fluctuation during survey period
Winds measured with Dwyer hand held wind meter 6 ft. above ground
T(a) is ambient temperature measured with Spirit Pocket Thermometer (REI) 4 ft. above ground in shade of body



Least Bell's Vireo Locations

Exhibit 3

Carbon Canyon

150 0 150 300 Feet

BonTerra CONSULTING

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Least Bell's Vireo

Survey methods for the least Bell's vireo followed the guidelines developed by the USFWS (USFWS 1999). The guidelines require that eight surveys be conducted at least 10 days apart between 10 April and 31 July. Surveys are to be conducted between dawn and 11:00 a.m. under suitable weather conditions. Survey dates, times, and weather data for the focused least Bell's vireo surveys are shown in Table 2.

Surveys were conducted by walking slowly and methodically within and along the edge of the riparian woodland. Taped vocalizations of the species were not used during the surveys. All surveys were conducted in the morning hours when vireos are most active. Most of the habitat was surveyed twice during each visit (once in each direction along the study area). The area of habitat surveyed is well below the amount recommended in the 1999 guidelines.

Table 2
Dates, Times, and Weather Conditions for Focused Least Bells Vireo Surveys

Date	Time	Weather Conditions*
April 11	0630-1200	T(a) = 58 ► 72 F; 1-3 mph winds; 100% ► 80% cloud cover
April 22	0630-1200	T(a) = 49 ► 64 F; 1-4 ► 4-7 mph winds; 70% ► 30% cloud cover
May 5	0630-1130	T(a) = 56 ► 69 F; 0 - 2 mph winds; 100% cloud cover
May 15	0600-1200	T(a) = 52 ► 68 F; 1-3 mph winds; 0 - 30% cloud cover
May 28	0630-1130	T(a) = 60 ► 87 F; 1-3 ► 0-2 mph winds; clear skies
June 11	0600-1100	T(a) = 56 ► 66 F; 1-3 mph winds; 100% ► 90% cloud cover
June 26	0600-1100	T(a) = 59 ► 85 F; 1-3 mph winds; clear skies
July 8	0600-1130	T(a) = 63 ► 76 F; 0-2 ► 1-3 mph winds; 100% overcast ► clear but hazy

► indicates a unidirectional change during survey period
* indicates a range of fluctuation during survey period
Winds measured with Dwyer hand held wind meter 6 ft. above ground
T(a) is ambient temperature measured with Spirit Pocket Thermometer (REI) 4 ft. above ground in shade of body

Yellow-billed Cuckoo

There are no formal survey guidelines for the yellow-billed cuckoo. Therefore, the surveys reported here were based on the protocol for the southwestern willow flycatcher because both species arrive relatively late in the breeding season. The willow flycatcher protocol requires five surveys, but only four surveys were conducted for the yellow-billed cuckoo because the first willow flycatcher survey is conducted in May, which is sooner than cuckoos would be expected in the region. Survey dates, times, and weather data for the focused surveys are shown in Table 3.