

Garcia and Associates



To: Molly Sandomire
From: Eric Jepsen
Date: September 8, 2015
RE: Fulton-Fitch Mountain Raptor Survey

Garcia and Associates (GANDA) was contracted to conduct raptor surveys along the Fulton-Fitch Mountain power line in Sonoma County, California. This survey was conducted to establish a baseline understanding of raptor nesting and activity within the power line corridor to inform the project's planning process, for which work is expected to commence in 2017.

Methods

Surveys were conducted by GANDA biologists Eric Jepsen and Brittney Wendell over five days during the nesting season. Surveys focused on the 8.5-mile-long power line, 1.5-mile 230-kV transmission line, staging areas, and access roads to the line and poles. The survey area included the lines, access roads, staging areas, and, where possible, an area extending up to 500 feet from these features. Observations for golden eagles were noted up to 1 mile from these features, reflecting agency requirements for management of this species. During surveys, all active and inactive raptor nests were mapped. For each nest location, we recorded the species present, the stage of nesting (nest building, incubation, fledging etc.), the type of nest (e.g. stick nest, cavity nest) and the structure supporting the nest (e.g. tree, pole, cell tower, bridge). We also recorded all observations of raptors, as well as any territorial behaviors that might indicate nesting activity (e.g. copulation, undulating flight patterns). In most cases, these observations were recorded, with the location of the individual approximately indicating the area of activity within a territory. In addition to raptors, surveys were used to identify nesting bird hotspots (i.e. areas where nesting bird activity was observed or is likely to occur). For these areas, we noted the species observed and/or the species likely to be present during the nesting season. Surveys were conducted from March through May 2015.

Results

Several common raptor species were observed throughout the survey area; however, few active nests were observed. Most raptor observations were of individuals soaring overhead, displaying over a territory, or calling at a distance and from within forested areas. All observations are presented in Table 1 and in the attached map set. Species observed include Cooper's hawk (*Accipiter cooperii*), golden eagle (*Aquila chrysaetus*), red-shouldered hawk (*Buteo lineatus*),

red-tailed hawk (*Buteo jamaicensis*) and white-tailed kite (*Elanus leucurus*). A single barn owl (*Tyto alba*) nesting box was observed; however, its occupancy status was unknown. Common raven (*Corvus corax*) is the only non-raptor species, for which nesting behavior was observed. Three unoccupied nests of unknown species were observed within the survey area.

Barn owl

A nest box was positioned adjacent to a vineyard, approximately 380 feet west of pole 0/2, on the northwest side of the survey area. Nest boxes are often installed adjacent to vineyards as part of integrated pest management strategies. The occupancy status of the observed nest box is unknown. The barn owl is a common and widespread, year-round resident throughout Sonoma County (Burrige 1995), with confirmed nesting occurring from April through August. However, the barn owl may nest outside of this breeding window.

Cooper's hawk

A single Cooper's hawk nest was observed within the riparian corridor immediately south off Brooks Road and west of the power line. The Cooper's hawk is a fairly common woodland and riparian species, often nesting within dense mixed forest and along creeks (Burrige 1995). Located just below the upper canopy, in a coast live oak (*Quercus agrifolia*) approximately 160 feet west of the power line, this observed Cooper's hawk nest fit the profile for Cooper's hawks nesting in Sonoma County. Cooper's hawks initiate courtship and nest building by February, begin incubation in March and generally fledge young between May and July. Given the abundance of woodland habitat bisected by multiple riparian areas, Cooper's hawk may nest in other parts of the survey area.

Golden eagle

One golden eagle territory was observed within the survey area. This territory covered much of the northwestern third of the power line, with an activity center and several potential nest trees located near the ridge line, approximately 0.33 mile northeast of the line, between poles 7/2 and 8/4. While eagle observations were centered on this activity center, low-flying, hunting and soaring eagles were regularly observed directly over and west of the power line as well. The golden eagle is a year-round resident of Sonoma County, initiating courtship as early as December and usually fledging young by June (Burrige 1995). This golden eagle pair was observed nest building in April, at a time when most central California eagles should be nearing the end of incubation and entering the nestling period (Terry Hunt, personal communication). It is not uncommon for a pair of eagles to skip breeding for a season, while still occupying and defending their territory. Given this information, we may expect that, while this pair did not nest in 2015, courtship and nesting will likely commence again in December 2015 or January 2016.

Red-shouldered hawk

Individuals of this species were regularly heard, though rarely seen throughout the survey area. Ten red-shouldered hawk activity areas were observed in 2015. Most vocalizations were heard during early-season surveys, the timing of which coincides with the courtship, increased territorial demarcation, and the onset of nesting. In spite of the high number of observed red-

shouldered hawks, no instances of nesting were confirmed. The red-shouldered hawk is a year-round resident in Sonoma County, with the earliest confirmed nest-building observed in mid-March, and the latest observation of fledglings occurring in mid-June (Burrige 1995). Red-shouldered hawks are common in woodland and riparian habitats adjacent to open grasslands, which adequately describes nearly two-thirds of the survey area.

Red-tailed hawk

This survey documented five red-tailed hawk territories within the survey area, with only one confirmation of nesting. This species is therefore a successful and abundant species with has an abundance of breeding records well-distributed throughout Sonoma County (Burrige 1995). Red-tailed hawks may nest in a variety of habitats, from open grassland to residential housing developments to dense woodland. The red-tailed hawk is a year-round resident in the survey area, with courtship and nesting beginning in earnest in early April, and concluding by early July.

White-tailed kite

Three white-tailed kite territories were documented in the survey area; however, no nests were confirmed. This species prefers to nest in oak woodland and isolated stands of shrubs or trees, adjacent to open grassland. While white-tailed kite territories are relatively easy to find due to highly visible and active adults, kite nests are often difficult to view, and are only discernable by the disappearance of the adults, as they descend into the top foliage of the nest tree. In Sonoma County, the white-tailed kite is a year-round resident nesting as early as the beginning of February, and fledging young as late as early July (Burrige 1995). In Contra Costa County, a pair of white-tailed kites was observed nest building in July 2015 (Vicki Trabold, personal communication.), an observation that suggests they could have active nests extending through August and into September. White-tailed kites are also known to congregate in large numbers in communal winter roosts.

Common raven

One pair of common raven was observed flying with nesting material in the vicinity of pole 6/5. Although a nest location for this pair was not observed; it was likely nearby to this location. This pair represented the only non-raptor species observed nesting within the survey area. Common raven are abundant and ever-present across the landscape, often visible as a mated pair perched or in transit, and silent or highly vocal. In Sonoma County, this species is a year-round resident with increased numbers in the winter. Nesting in Sonoma County has been observed as early as the beginning of April through the middle of July (Burrige 1995).

Unoccupied nests

Three unoccupied nests were observed. One was small, songbird-sized, and occurred in a medium-sized madrone (*Arbutus menziesii*), within a densely forested area. One nest was a mid-sized raptor nest within the upper third of a mature cottonwood in a riparian zone. The third unoccupied nest was a large stick nest in a eucalyptus within the approximate territory of one of the observed red-tailed hawk territories (RTHA-04) within the survey area.

Nesting bird hotspots

The northern 8.5 miles of power line is located mainly in woodland, grassland, or agricultural (vineyard) habitats and intersects with very little residential development and a few roads. Much of this part of the survey area sees little human activity, supports vibrant and diverse bird populations, and could be described as a “nesting bird hotspot.” The southern 1.5 miles of transmission line runs through residential communities. However, between poles 25/111 and 25/112 the line crosses Mark West Creek which supports a mature riparian forest, which in turn supports a robust avian community. This area constitutes a “nesting bird hotspot” within the survey area. Nesting birds observed or expected to occur in these hotspot areas include common California riparian, deciduous woodland, and grassland species (Table 2).

Table 1. 2015 nesting raptor observations within the Fulton-Fitch Mountain reconductoring survey area.

| Species | ID | Date | Latitude | Longitude | Nesting? | Observation |
|---|----------------|-----------|-----------|-------------|----------|--|
| Barn owl (<i>Tyto alba</i>) | BAOW-01 | 5/13/2015 | 38.606376 | -122.844107 | Unknown | Nest box installed at edge of vineyard, approximately 380 feet west of pole 0/2. |
| Cooper's hawk (<i>Accipiter cooperii</i>) | COHA-01 | 4/8/2015 | 38.574944 | -122.796596 | Unknown | Adult vocalizations audible in riparian corridor west of the power line and immediately east of Brooks Road. |
| | | 4/28/2015 | 38.574944 | -122.796596 | Yes | Nest observed in upper canopy of riparian corridor. Tail of incubating female visible sticking out of nest. Adult male observed flying west from nest area. Nest is approximately 160 feet west of the power line and 415 feet from the lay-down area. |
| | | 5/13/2015 | 38.574944 | -122.796596 | Yes | Female in incubation or brooding posture at nest. Several "plucking perches" in evidence within vicinity of the nest. Nest still active. |
| | | 5/27/2015 | 38.574944 | -122.796596 | Yes | Nest contents not visible. Adult present in vicinity of nest, 1 nestling audible. |
| Golden eagle (<i>Aquila chrysaetus</i>) | GOEA-01 | 4/8/2015 | 38.599939 | -122.815876 | No | Pair of adult eagles soaring along ridge on the north side of the Weston/Highland Acres Ranch. Both birds soaring and undulating north, out of sight beyond ridge, reappearing in vicinity of blue gum (<i>Eucalyptus globulus</i>) stands north and east of the ranch houses. Perching observed in eucalyptus east of ranch houses, approximately 0.33 mile from power line, between poles 7/2 and 8/4. |
| | | 4/28/2015 | 38.596345 | -122.811039 | No | Adult pair observed bringing sticks and foliage to eucalyptus tree multiple times (nest-building—due to time of year, this does not represent an active nest). Both birds observed soaring east and west along the ridge in this location, as well as directly over power line. |

| Species | ID | Date | Latitude | Longitude | Nesting? | Observation |
|---|----------------|-----------|-------------|-------------|--|---|
| | | 5/13/2015 | 38.596345 | -122.811039 | No | Both adults visible soaring over the ranch and line throughout survey. |
| | | 5/27/2015 | 38.596345 | -122.811039 | No | Adult pair perched, then soaring east of the Weston ranch house, in the vicinity of blue gum stand where nest-building was observed. |
| Red-shouldered hawk <i>(Buteo lineatus)</i> | RSHA-01 | 4/8/2015 | 38.599159 | -122.818106 | Unknown | Audible calling from stand of oaks. Status unknown, but well over 250 feet from line. |
| | RSHA-02 | 4/8/2015 | 38.595398 | -122.822273 | Unknown | Audible calling from riparian area southwest of pole 8/1. Status unknown, but well beyond 250 feet from line. |
| | RSHA-03 | 4/8/2015 | 38.591855 | -122.815839 | Unknown | Audible calling south of line between pole 7/4 and 7/5. Status unknown but over 250 feet from line. |
| | RSHA-04 | 4/28/2015 | 38.536741 | -122.762500 | Unknown | Audible from riparian area northwest of pole 2/6. Status unknown. Approximately 250 feet from the power line. |
| | RSHA-05 | 4/28/2015 | 38.506507 | -122.758814 | Unknown | Audible from riparian area southeast of pole 25/111. Status unknown, but over 250 feet from power line. |
| | RSHA-06 | 4/28/2015 | 38.530430 | -122.761408 | Unknown | Audible calling from trees just west of the line, on the north-facing slope between pole 2/2 and 2/3. Status unknown. |
| | RSHA-07 | 4/28/2015 | 38.545471 | -122.774956 | Unknown | Audible calling from riparian area north of Chalk Hill Road and west of the power line. Status unknown, but well over 250 feet from the power line. |
| | | 5/13/2015 | 38.545471 | -122.774956 | Unknown | Audible calling from riparian area, then visible flying southeast, parallel with power line. |
| | RSHA-08 | 4/28/2015 | 38.566998 | -122.787768 | Unknown | Audible calling from oak woodland east of power line, between pole 5/3 and 5/4. Status unknown, but over 250 feet from power line. |
| RSHA-09 | 4/8/2015 | 38.574761 | -122.794966 | Unknown | Audible calling east of power line. Status unknown, but over 200 feet from the power line. | |

| Species | ID | Date | Latitude | Longitude | Nesting? | Observation |
|--|----------------|-----------|-------------|-------------|--|--|
| | RSHA-10 | 4/28/2015 | 38.582418 | -122.803625 | Unknown | Audible calling from riparian area southwest of pole 6/6. Status unknown, but well over 250 feet from the power line. |
| Red-tailed hawk <i>(Buteo jamaicensis)</i> | RTHA-01 | 4/8/2015 | 38.571952 | -122.791485 | No | Begging call audible approximately 540 feet east of pole 5/7. No visual confirmation made. |
| | | 5/13/2015 | 38.571952 | -122.791485 | No | Adult pair soaring and vocalizing in vicinity of 4/8/2015 observation, approximately 550 feet east of line |
| | RTHA-02 | 3/31/2015 | 38.603063 | -122.838332 | No | Territorial pair engaged in courtship display over stand of oaks: leg-dangling, calling, and soaring together. Over 250 feet from the power line. |
| | | 5/13/2015 | 38.603063 | -122.838332 | No | Pair observed soaring widely over woodland and hillside, kiting in the wind. Some courtship display and chasing of other red-tailed hawks. Nesting not observed. |
| | RTHA-03 | 3/31/2015 | 38.524676 | -122.758983 | No | Adult kiting above line. |
| | | 4/28/2015 | 38.524676 | -122.758983 | No | Adult perched and soaring between multiple trees in vicinity of pole 1/9 and 2/0 of power line. |
| | RTHA-04 | 4/28/2015 | 38.532993 | -122.763143 | No | Adult pair of red-tailed hawks engaged in courtship display (leg-dangling, undulating, and soaring together), and chasing other individuals from the area. |
| | | 5/13/2015 | 38.532993 | -122.763143 | No | Adult pair soaring in area. |
| RTHA-05 | 4/28/2015 | 38.547706 | -122.774651 | Unknown | Adult perched in oak woodland, and soaring over vineyards west of pole 3/7. Status unknown, but over 250 feet from the power line. | |
| | 5/13/2015 | 38.547706 | -122.774651 | Yes | Adult pair soaring over area. Begging calls audible from suspected nest area. At least two young, based on calls. Nest not found. Potential nest area approximately 400 feet west of pole 3/7. | |
| White-tailed kite <i>(Elanus leucurus)</i> | WTKI-01 | 4/8/2015 | 38.598965 | -122.820828 | Unknown | Perch and activity center. |

| Species | ID | Date | Latitude | Longitude | Nesting? | Observation |
|---|----------------|-----------|-----------|-------------|----------|---|
| | WTKI-02 | 4/28/2015 | 38.592653 | -122.818490 | Unknown | Adult rose up out of trees to chase the golden eagle that was soaring over the area, approximately 825 feet southwest of power line. |
| | WTKI-03 | 4/28/2015 | 38.578543 | -122.798354 | Unknown | Adult flushed from perch in oak approximately 140 feet northeast of pole 6/3. Status unknown. No nest observed. Not observed in subsequent surveys. |
| Common raven (<i>Corvus corax</i>) | CORA-01 | 4/8/2015 | 38.581709 | -122.800033 | Yes | Pair observed carrying nesting material in an area east of pole 6/5. |
| Unknown nest | Nest-01 | 5/13/2015 | 38.524234 | -122.759065 | No | Old small/medium-sized stick nest (jay-sized), in madrone. |
| | Nest-02 | 5/13/2015 | 38.506989 | -122.761084 | No | Old medium-sized nest (Cooper's hawk) in poplar. |
| | Nest-03 | 5/13/2015 | 38.532502 | -122.765497 | No | Large, unoccupied raptor nest in eucalyptus adjacent to Faught Road, approximately 1000 feet west of power line. Status unknown, though within RTHA-04 territory. |

Table 2. Bird species observed or likely to occur within Fulton-Fitch Mountain project area and nesting phenology¹.

| Common Name | Scientific Name | Observed? | Earliest Confirmed Breeding | Latest Confirmed Breeding |
|----------------------|----------------------------|-----------|------------------------------------|------------------------------------|
| Turkey Vulture | <i>Cathartes aura</i> | Yes | April 13 (nest-building) | September 1 (nest with young) |
| White-tailed Kite | <i>Elanus leucurus</i> | Yes | February 10 (nest-building) | July 13 (recently fledged young) |
| Northern Harrier | <i>Circus cyaneus</i> | Yes | April 15 (occupied nest) | July 6 (recently fledged young) |
| Sharp-shinned Hawk | <i>Accipiter striatus</i> | No | May 5 (occupied nest) | n/a |
| Cooper's Hawk | <i>Accipiter cooperii</i> | Yes | February 28 (nest-building) | August 16 (recently fledged young) |
| Red-shouldered Hawk | <i>Buteo lineatus</i> | Yes | March 20 (nest-building) | July 8 (recently fledged young) |
| Red-tailed Hawk | <i>Buteo jamaicensis</i> | Yes | April 5 (occupied nest) | July 5 (adult attending young) |
| Golden Eagle | <i>Aquila chrysaetus</i> | Yes | May 18 (occupied nest) | June 12 (occupied nest) |
| American Kestrel | <i>Falco sparverius</i> | Yes | May 13 (occupied nest) | July 23 (adult attending young) |
| Ring-necked Pheasant | <i>Phasianus colchicus</i> | No | April 12 (recently fledged young) | June 20 (adult attending young) |
| Wild Turkey | <i>Meleagris gallopavo</i> | Yes | May 11 (adult distraction display) | July 31 (adult attending young) |

¹ Breeding dates are from the Sonoma County Breeding Bird Atlas (Burrige 1995)

| Common Name | Scientific Name | Observed? | Earliest Confirmed Breeding | Latest Confirmed Breeding |
|-------------------------------|-----------------------------------|------------------|-------------------------------------|-------------------------------------|
| California Quail | <i>Callipepla californica</i> | Yes | April 5 (recently fledged young) | August 14 (adult attending young) |
| Rock Pigeon | <i>Columba livia</i> | Yes | April 21 (nest-building) | July 4 (occupied nest) |
| Band-tailed Pigeon | <i>Patagioenas fasciata</i> | Yes | August 30 (recently fledged young) | October 27 (recently fledged young) |
| Mourning Dove | <i>Zenaida macroura</i> | Yes | March 19 (nest-building) | July 13 (adult attending young) |
| Barn Owl | <i>Tyto alba</i> | No | April 12 (recently fledged young) | August 6 (occupied nest) |
| Western Screech-Owl | <i>Megascops kennicottii</i> | No | March 20 (recently fledged young) | June 19 (nest with young) |
| Great Horned Owl | <i>Bubo virginianus</i> | No | April 14 (nest with young) | May 23 (occupied nest) |
| Northern Pygmy-Owl | <i>Glaucidium gnoma</i> | No | June 19 (adult attending young) | n/a |
| Anna's Hummingbird | <i>Calypte anna</i> | Yes | February 15 (adult attending young) | July 4 (adult attending young) |
| Allen's Hummingbird | <i>Selasphorus sasin</i> | No | March 9 (nest-building) | June 15 (occupied nest) |
| Belted Kingfisher | <i>Megaceryle alcyon</i> | No | May 15 (occupied nest) | August 13 (nest with young) |
| Acorn Woodpecker | <i>Melanerpes formicivorus</i> | Yes | April 8 (recently fledged young) | August 24 (adult attending young) |
| Red-breasted Sapsucker | <i>Sphyrapicus ruber</i> | No | June 6 (occupied nest) | June 13 (adult attending young) |
| Nuttall's Woodpecker | <i>Picoides nuttallii</i> | Yes | April 22 (nest with young) | July 8 (adult attending young) |
| Downy Woodpecker | <i>Picoides pubescens</i> | Yes | April 28 (nest with young) | August 16 (recently fledged young) |
| Hairy Woodpecker | <i>Picoides villosus</i> | No | May 10 (adult attending young) | July 19 (recently fledged young) |
| Northern Flicker | <i>Colaptes auratus</i> | Yes | May 6 (occupied nest) | July 22 (adult attending young) |
| Pileated Woodpecker | <i>Dryocopus pileatus</i> | Yes | April 6 (nest with eggs) | August 31 (recently fledged young) |
| Olive-sided Flycatcher | <i>Contopus cooperi</i> | No | June 18 (nest with young) | July 27 (occupied nest) |
| Western Wood Pewee | <i>Contopus sordidulus</i> | Yes | May 15 (nest with young) | July 18 (adult attending young) |
| Pacific-slope Flycatcher | <i>Empidonax difficilis</i> | Yes | May 9 (occupied nest) | July 19 (nest building) |
| Black Phoebe | <i>Sayornis nigricans</i> | Yes | April 4 (occupied nest) | August 11 (recently fledged young) |
| Ash-throated Flycatcher | <i>Myiarchus cinerascens</i> | Yes | May 11 (occupied nest) | July 30 (recently fledged young) |
| Western Kingbird | <i>Tyrannus verticalis</i> | Yes | April 27 (occupied nest) | July 22 (recently fledged young) |
| Tree Swallow | <i>Tachycineta bicolor</i> | No | March 31 (occupied nest) | July 8 (recently fledged young) |
| Violet-green Swallow | <i>Tachycineta thalassina</i> | Yes | April 13 (occupied nest) | July 13 (recently fledged young) |
| Northern rough-winged Swallow | <i>Stelgidopteryx serripennis</i> | No | April 30 (occupied nest) | June 21 (recently fledged young) |
| Cliff Swallow | <i>Petrochelidon pyrrhonota</i> | No | April 7 (occupied nest) | July 15 (nest with young) |

| Common Name | Scientific Name | Observed? | Earliest Confirmed Breeding | Latest Confirmed Breeding |
|-----------------------------|----------------------------------|------------------|------------------------------------|-----------------------------------|
| Bam Swallow | <i>Hirundo rustica</i> | Yes | April 9 (nest-building) | July 29 (nest with young) |
| Steller's Jay | <i>Cyanocitta stelleri</i> | Yes | April 14 (recently fledged young) | August 15 (adult attending young) |
| Western Scrub Jay | <i>Aphelocoma californica</i> | Yes | March 29 (nest-building) | July 15 (fledgling) |
| American Crow | <i>Corvus brachyrhynchos</i> | Yes | March 29 (nest-building) | June 30 (adult attending young) |
| Common Raven | <i>Corvus corax</i> | Yes | April 10 (occupied nest) | July 13 (adult attending young) |
| Chestnut-backed Chickadee | <i>Poecile rufescens</i> | Yes | April 8 (adult attending young) | July 15 (adult attending young) |
| Oak Titmouse | <i>Baeolophus inornatus</i> | Yes | March 13 (adult attending young) | July 12 (adult attending young) |
| Bushtit | <i>Psaltriparus minimus</i> | Yes | March 1 (adult attending young) | June 15 (adult attending young) |
| White-breasted Nuthatch | <i>Sitta carolinensis</i> | No | April 19 (adult attending young) | July 29 (recently fledged young) |
| Brown Creeper | <i>Certhia Americana</i> | Yes | May 10 (occupied nest) | July 4 (recently fledged young) |
| Bewick's Wren | <i>Thryomanes bewickii</i> | Yes | March 25 (occupied nest) | July 19 (recently fledged young) |
| House Wren | <i>Troglodytes aedon</i> | No | April 22 (occupied nest) | June 29 (adult attending young) |
| Western Bluebird | <i>Sialia mexicana</i> | Yes | April 9 (nest-building) | July 5 (occupied nest) |
| Swainson's Thrush | <i>Catharus ustulatus</i> | No | May 28 (adult attending young) | July 4 (adult attending young) |
| American Robin | <i>Turdus migratorius</i> | Yes | April 22 (adult attending young) | July 15 (adult attending young) |
| Northern Mockingbird | <i>Mimus polyglottos</i> | Yes | May 3 (nest-building) | August 21 (adult attending young) |
| European Starling | <i>Sturnus vulgaris</i> | Yes | April 19 (nest with young) | July 10 (adult attending young) |
| Cassin's Vireo | <i>Vireo cassinii</i> | No | April 8 (adult attending young) | July 18 (adult attending young) |
| Hutton's Vireo | <i>Vireo huttoni</i> | No | April 20 (nest-building) | July 11 (adult attending young) |
| Warbling Vireo | <i>Vireo gilvus</i> | No | April 19 (recently fledged young) | July 4 (adult attending young) |
| Orange-crowned Warbler | <i>Oreothlypis celata</i> | Yes | April 23 (adult attending young) | July 5 (recently fledged young) |
| Yellow Warbler | <i>Setophaga petechial</i> | No | June 15 (occupied nest) | June 28 (adult attending young) |
| Black-throated Gray Warbler | <i>Setophaga nigrescens</i> | No | June 6 (adult attending young) | June 20 (adult attending young) |
| Wilson's Warbler | <i>Cardellina pusilla</i> | No | April 1 (nest with eggs) | July 28 (adult attending young) |
| Yellow-breasted Chat | <i>Icteria virens</i> | No | May 2 (nest with eggs) | June 15 (adult attending young) |
| Western Tanager | <i>Piranga ludoviciana</i> | No | May 10 (nest-building) | July 10 (recently fledged young) |
| Black-headed Grosbeak | <i>Pheucticus melanocephalus</i> | No | April 27 (occupied nest) | July 4 (adult attending young) |

| Common Name | Scientific Name | Observed? | Earliest Confirmed Breeding | Latest Confirmed Breeding |
|----------------------|-------------------------------|------------------|------------------------------------|-----------------------------------|
| Lazuli Bunting | <i>Passerina amoena</i> | No | June 3 (adult attending young) | July 2 (adult attending young) |
| Spotted Towhee | <i>Pipilo maculatus</i> | Yes | April 29 (adult attending young) | August 15 (adult attending young) |
| California Towhee | <i>Melospiza crissalis</i> | Yes | April 20 (adult attending young) | August 10 (nest with young) |
| Song Sparrow | <i>Melospiza melodia</i> | Yes | March 18 (adult attending young) | July 27 (recently fledged young) |
| Dark-eyed junco | <i>Junco hyemalis</i> | Yes | April 18 (nest with young) | July 12 (adult attending young) |
| Western Meadowlark | <i>Sturnella neglecta</i> | No | May 25 (nest with eggs) | July 2 (recently fledged young) |
| Brewer's Blackbird | <i>Euphagus cyanocephalus</i> | Yes | April 7 (nest-building) | July 3 (recently fledged young) |
| Brown-headed Cowbird | <i>Molothrus ater</i> | No | April 25 (nest with eggs) | July 20 (adult attending young) |
| Bullock's Oriole | <i>Icterus bullockii</i> | No | April 2 (occupied nest) | May 24 (recently fledged young) |
| Purple Finch | <i>Haemorhous purpureus</i> | No | May 19 (nest-building) | June 21 (occupied nest) |
| House Finch | <i>Haemorhous mexicanus</i> | Yes | April 6 (occupied nest) | July 15 (recently fledged young) |
| Lesser Goldfinch | <i>Spinus psaltria</i> | No | March 28 (nest-building) | July 16 (recently fledged young) |
| House Sparrow | <i>Passer domesticus</i> | Yes | April 5 (nest-building) | June 30 (occupied nest) |



Source: Bing Maps Aerial; GANDA GIS 2015
 USGS 7.5' Quadrangles: SEBASTOPOL, HEALDSBURG

* Routes were drawn to provide a preliminary centerline in order to establish a survey corridor

Project particulars are preliminary and subject to change with CPUC permitting, ground conditions and other project issues

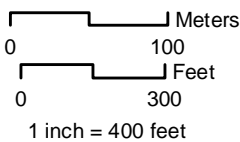
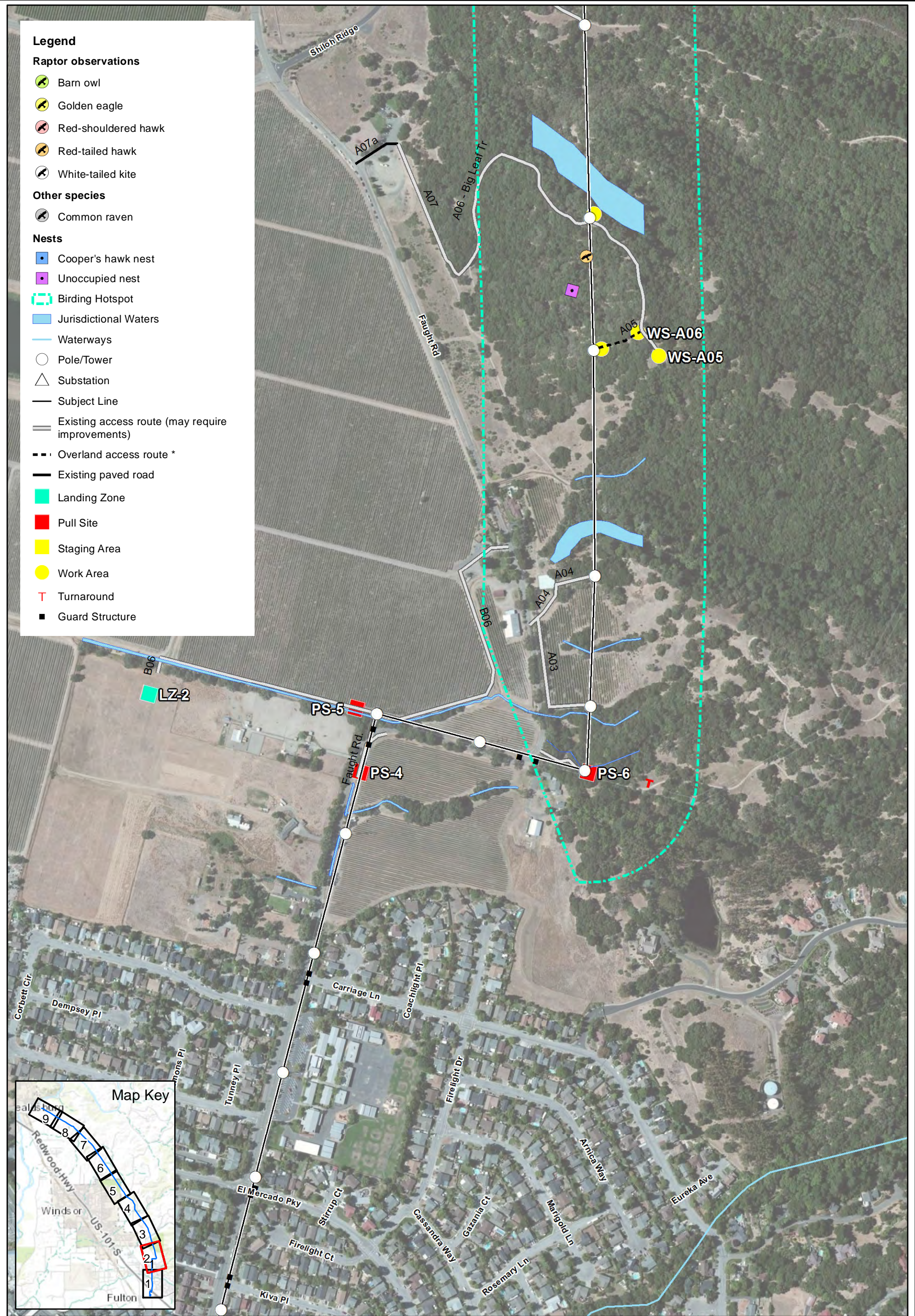


Figure 1. Raptor Observations Map
 Fulton-Fitch Mountain Reconstructing Project





Source: Bing Maps Aerial; GANDA GIS 2015
 USGS 7.5' Quadrangles: SEBASTOPOL, HEALDSBURG

* Routes were drawn to provide a preliminary centerline in order to establish a survey corridor

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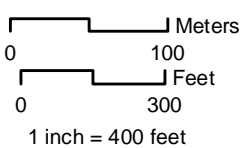








Figure 1. Raptor Observations Map
 Fulton-Fitch Mountain Reconductoring Project

Legend



Raptor observations


-  Barn owl
-  Golden eagle
-  Red-shouldered hawk
-  Red-tailed hawk
-  White-tailed kite


Other species


-  Common raven

Nests

-  Cooper's hawk nest
-  Unoccupied nest


-  Birding Hotspot


-  Jurisdictional Waters


-  Waterways


-  Pole/Tower


-  Substation

-  Subject Line

-  Existing access route (may require improvements)


-  Overland access route *


-  Existing paved road


-  Landing Zone

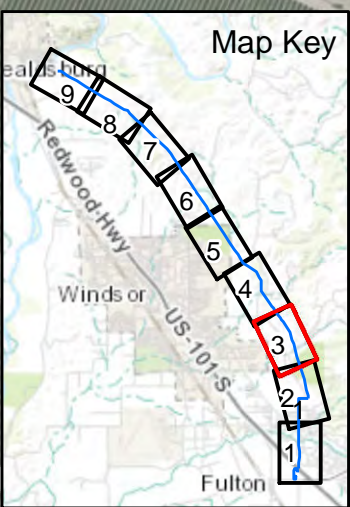
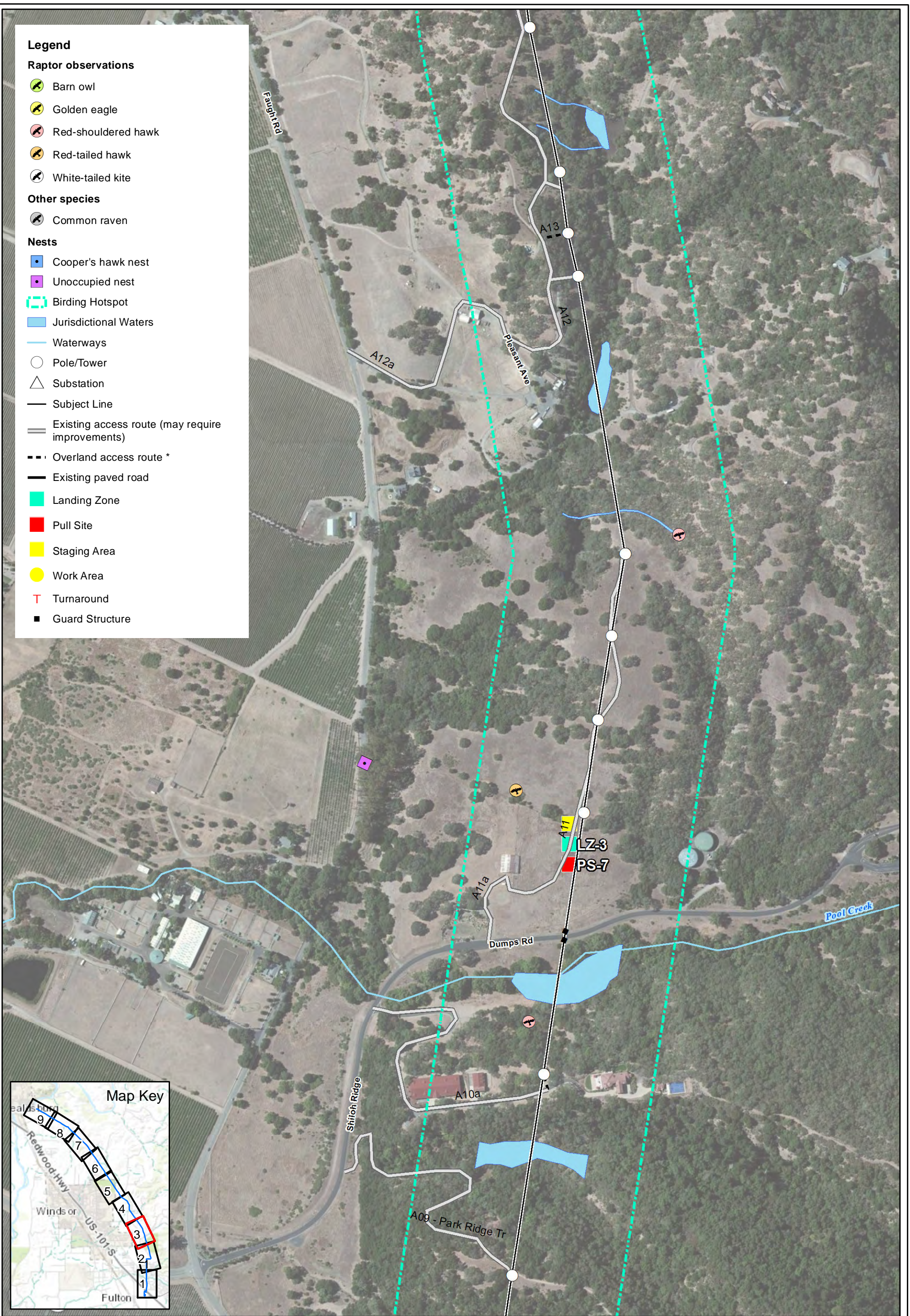
-  Pull Site

-  Staging Area

-  Work Area

-  Turnaround

-  Guard Structure



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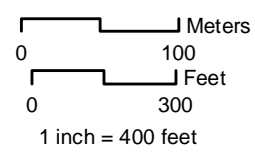






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
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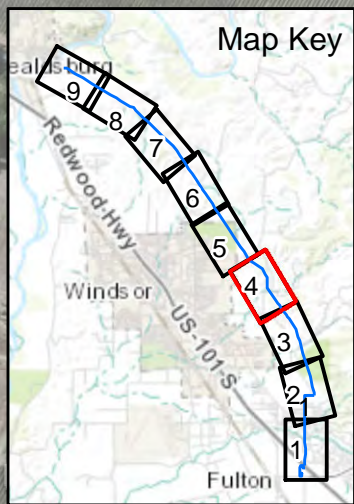
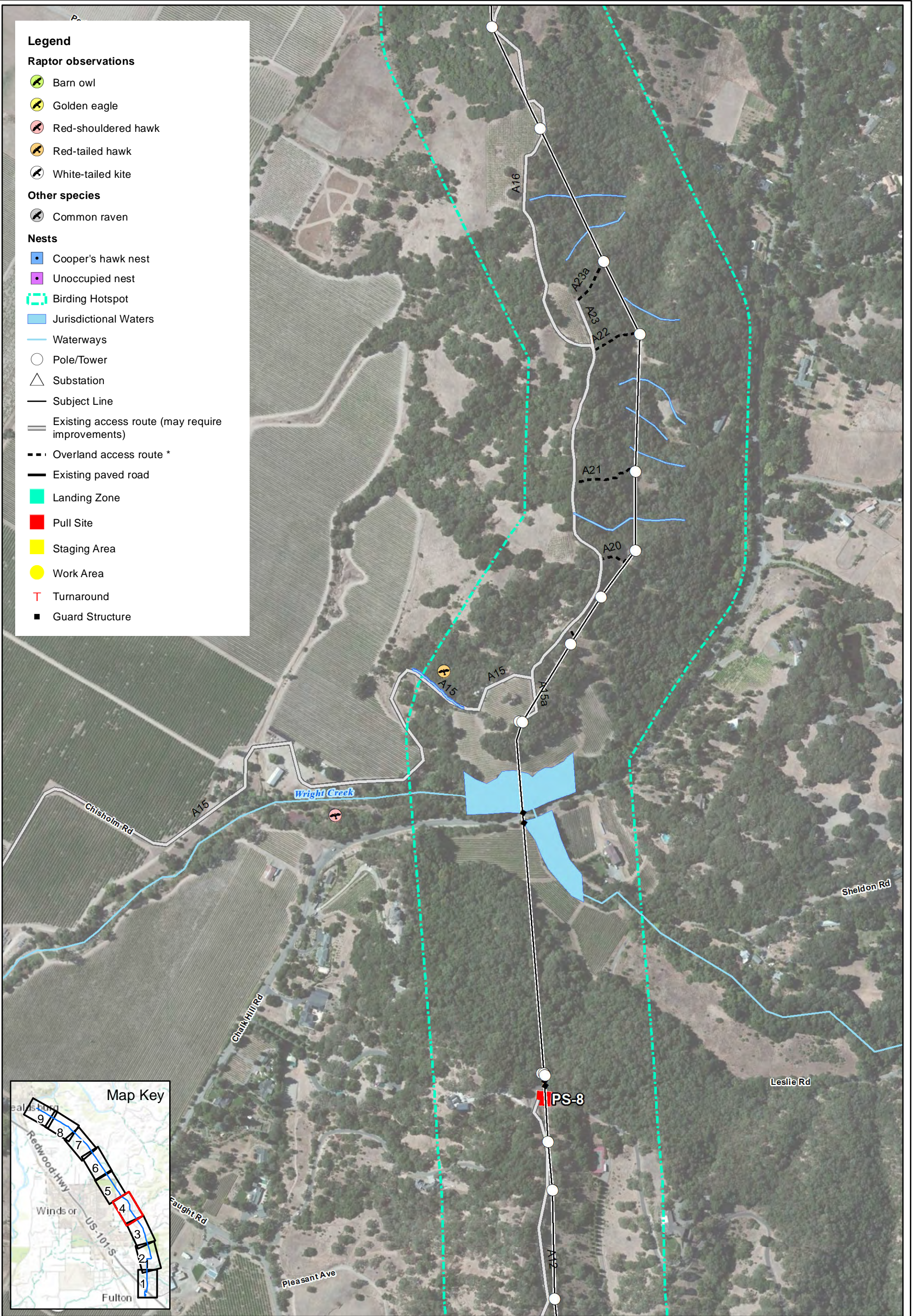
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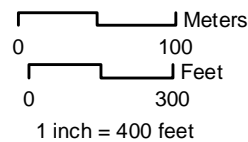







Figure 1. Raptor Observations Map
Fulton-Fitch Mountain
Reconstructing Project

Sonoma County, CA
Map 4 of 9

Legend



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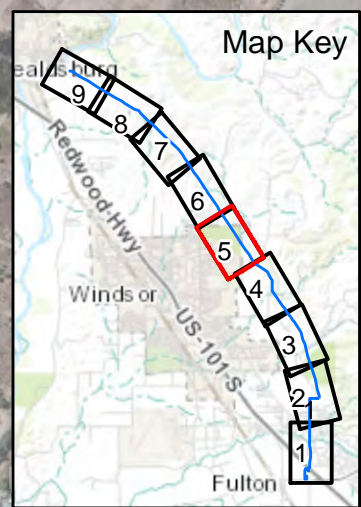
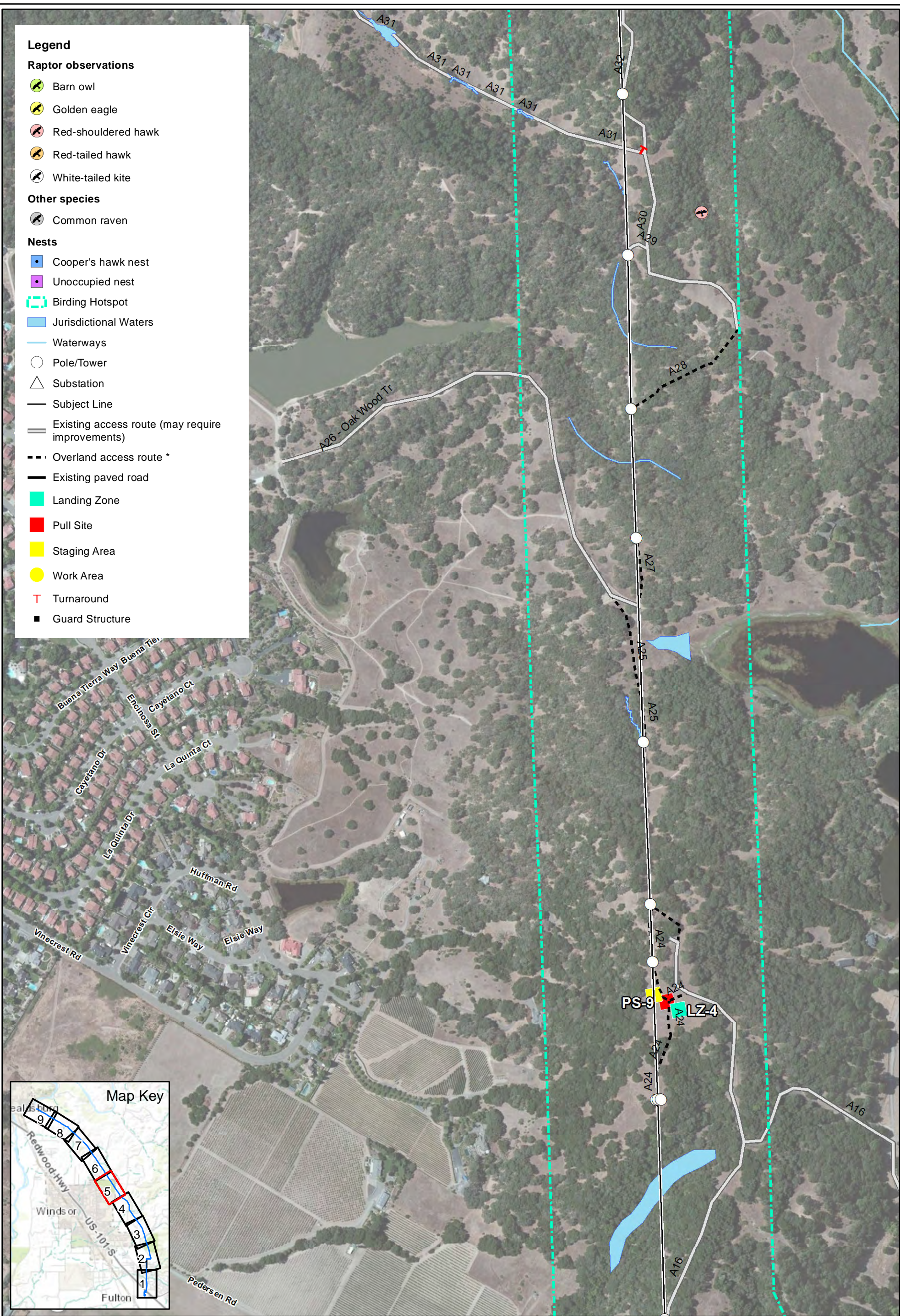
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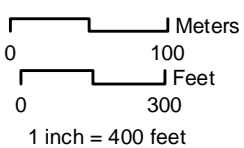


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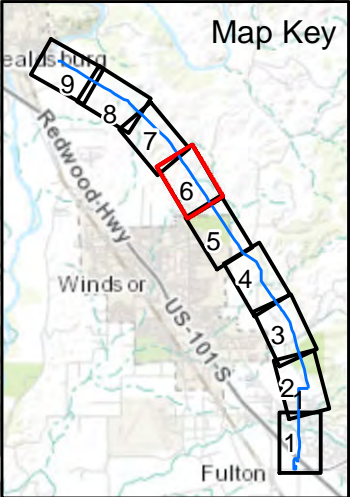
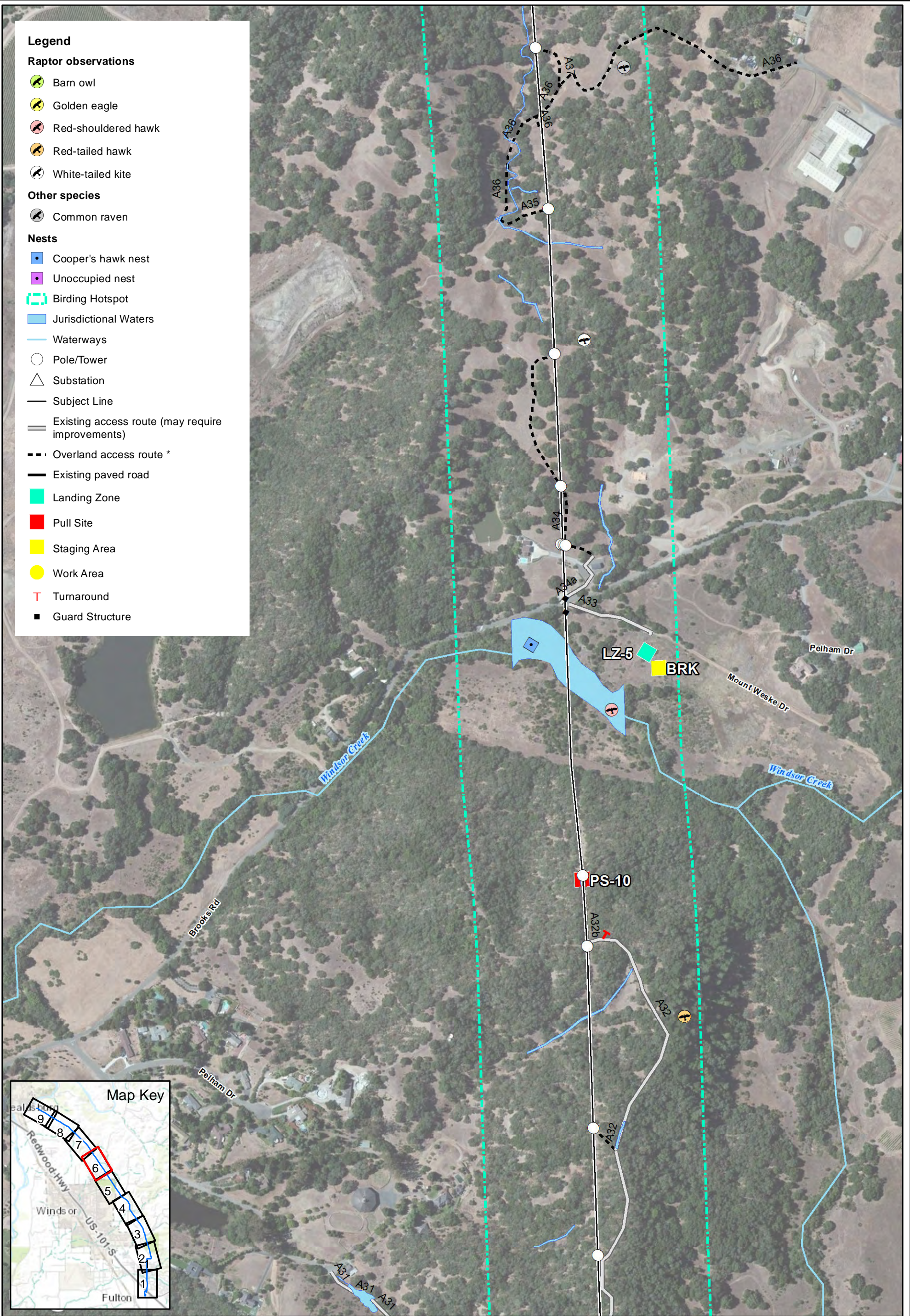
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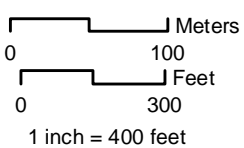








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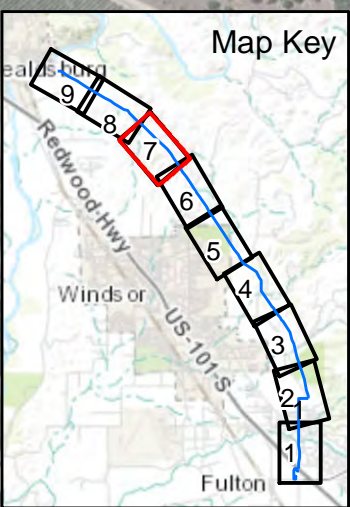
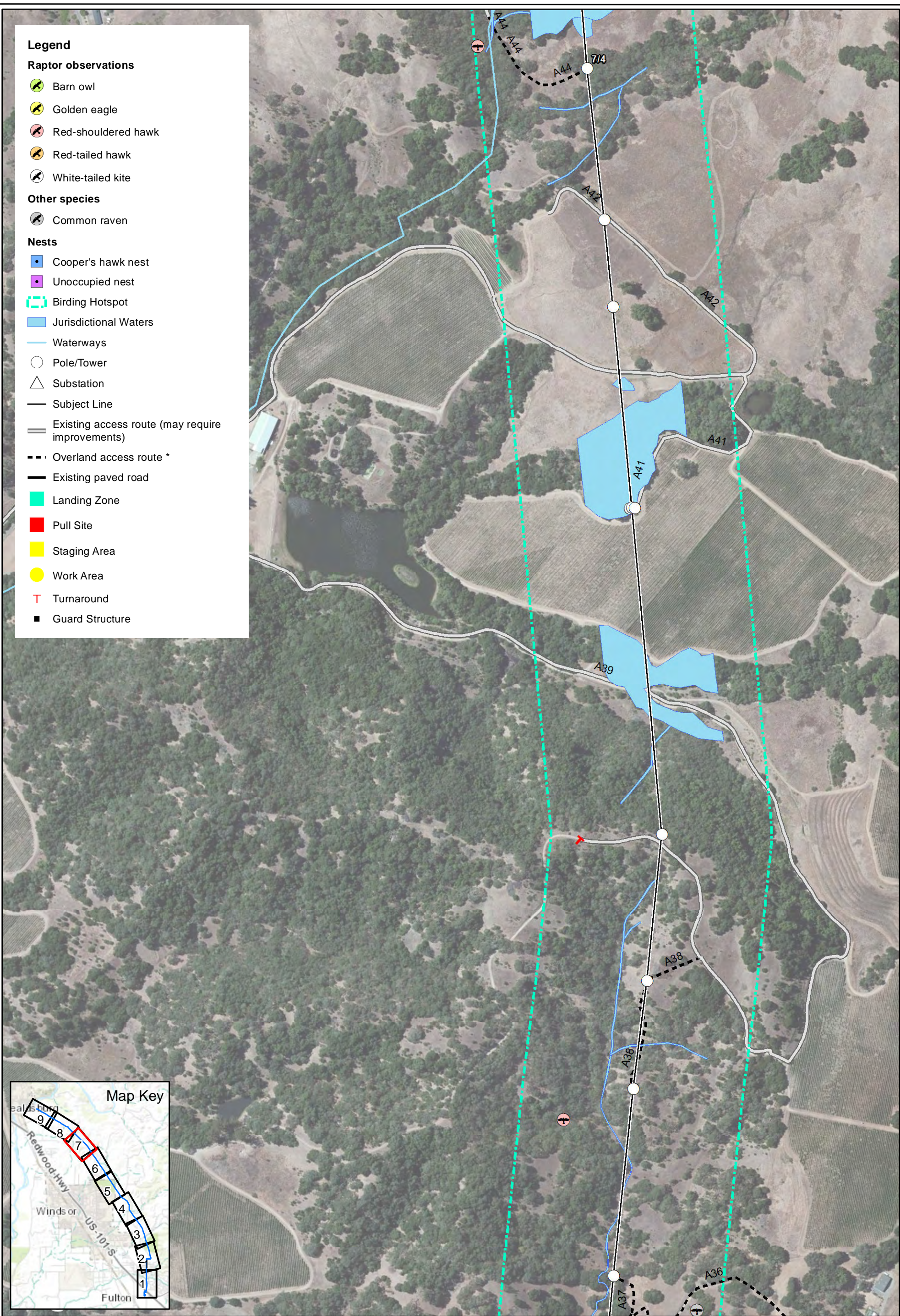
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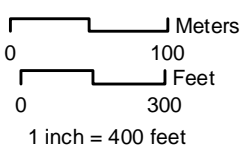







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Sonoma County, CA
Map 7 of 9

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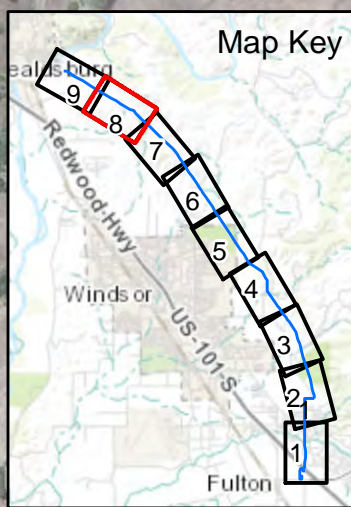
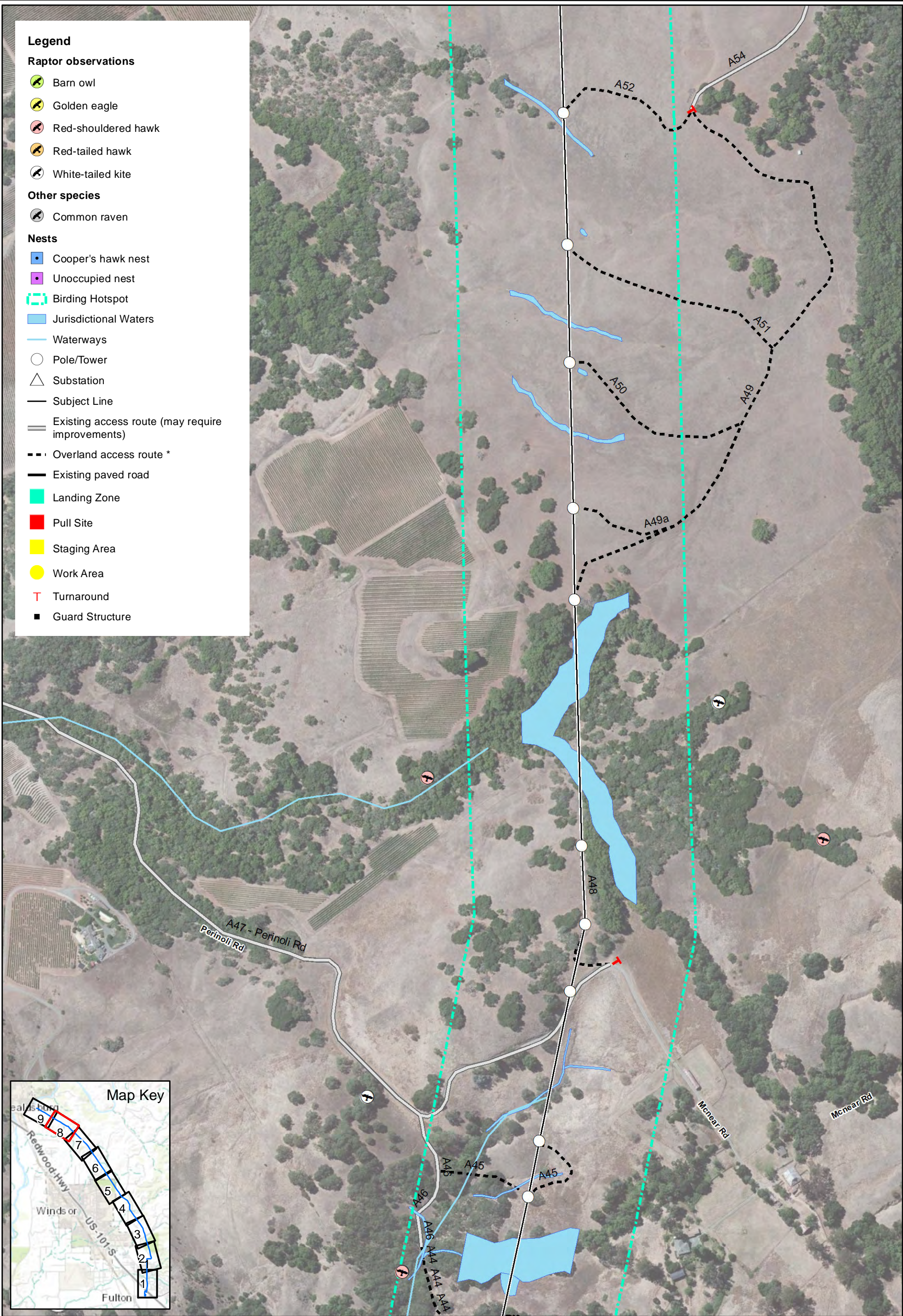
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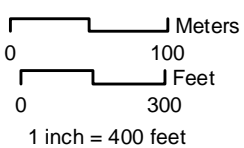


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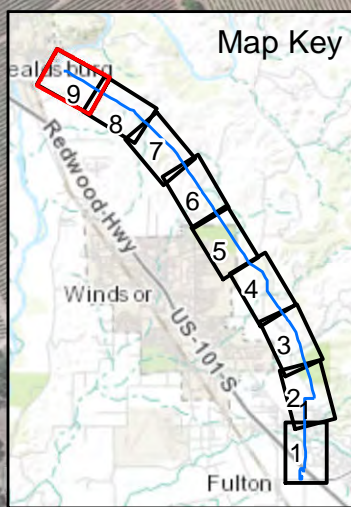
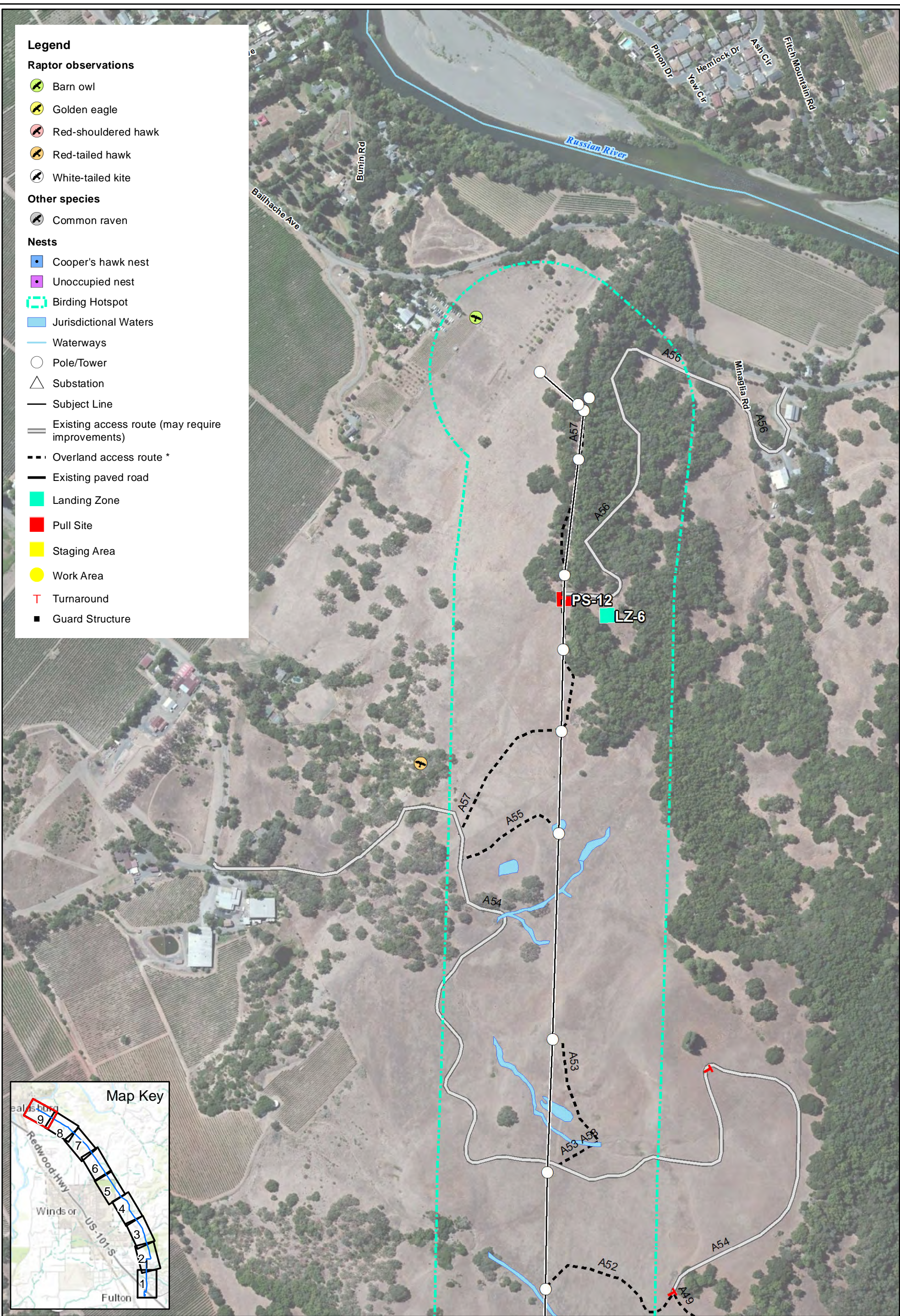
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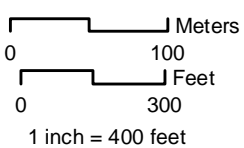


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Literature Cited

Burridge, Betty (Editor). 1995. Sonoma County Breeding Bird Atlas: Detailed maps and accounts for our nesting birds. Madrone Audubon Society. Santa Rosa, CA. 216 pages.