



Forest Ecosystem Management

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Northern Spotted Owl Assessment for Fulton Project

Completed by: Pamela Town, Consulting Wildlife Biologist
July 22, 2024

Northern Spotted Owls (*Strix occidentalis caurina*)

Northern Spotted Owls (NSO) are listed as Threatened under both the Federal Endangered Species Act (ESA) and California State Endangered Species Act (CESA), as well as Sensitive under California Department of Forestry and Fire Protection (CalFire). They are a common to uncommon owl in the coniferous forest of the Pacific Northwest (PNW), ranging from southern British Columbia south to Marin County in northwestern California.

The northern spotted owl is a subspecies of spotted owl (*Strix occidentalis*) found in western North America. They are medium-sized (16 to 20 inches) dark brown owls with a barred tail, white spots on their head and breast; and dark brown eyes surrounded by a prominent facial disk. The northern spotted owl is a permanent resident in suitable habitat residing in dense, old-growth, and multi-layered second-growth stands of mixed conifer, redwood, and Douglas-fir habitats.

Northern Spotted Owls are rodent specialists, primarily feeding on woodrats (*Neotoma fuscipes*), deer mice (*Peromyscus spp.*), Sonoma tree voles (*Arborimus pomo*), voles (*Microtus spp.*) and northern flying squirrels (*Glaucomys sabrinus*); but has been known to consume small birds, bats, amphibians, and large arthropods. Foraging is completed by searching for prey from a perch and swooping/pouncing on the prey. NSOs usually nest in stick nests (mistletoe clump, abandoned raptor, or squirrel nest), in a cavity tree or snag, or in the broken top of a large tree. In the interior region of their range (as seen in Napa County), there appears to be a preference for well-shaded habitat in narrow, steep-sided canyons with north or east-facing slopes to assist in thermoregulatory needs, as they are intolerant of high temperatures.

Spotted owl life-history traits suggest coevolution with late-seral, old-growth forests, and second-growth forests with scattered late-seral characteristics. They are relatively long-lived and have high adult survival, low reproductive output, and high parental investment in offspring.

Threats to the northern spotted owl include increased competition, and perhaps predation, from the barred owl (*Strix varia*). In addition to the threats from the barred owls, spotted owl populations may also be negatively impacted by large-scale wildfires and unregulated activities that modify habitat and introduce toxic substances into the environment and food chain (i.e. illegal logging, development, marijuana cultivation, etc.).

This Assessment is for the Fulton Project located at 263 Petrified Forest Road; Calistoga, CA in Napa County; which occurs within the range of the Northern Spotted Owl.

Project General Information (Attachment #1)

Project Location: 263 Petrified Forest Road; Calistoga, CA

Legal Description of Parcel: Portions of Section 2 & 3, T08N, R07W MDB&M

APN: 020-430-027 – Block 27

020-430-018 – Block 18

020-430,019 – Blocks 19 (3)

County: Napa County

Access: Petrified Forest Road

Proposed Project (Attachment #2):

- Forest Conversion to Vineyard (4.99 acres)
 - Block 27 = 2.15 acres* of Oak Woodland
 - Block 18 = .34 acres of Douglas-fir Woodland
 - Block 19A = 1.5 acres of Douglas-fir Woodland
 - Block 19B = .25 acres of Coastal Mixed Woodland
 - Block 19C = .75 acres of Coastal Mixed Woodland

(*Gross Acres impacted)

Known Northern Spotted Owl Territories

According to the California Department of Fish & Wildlife's spotted owl viewer dated 09JUL24, there is one known northern spotted owl territory (NAP0013) within 1.3 miles of the Property (Attachment #3). The 1.3-mile assessment area was created by USFWS for a Take Avoidance of northern spotted owls within the California Interior (outside the redwood zone). Although Napa County does have redwoods, the environmental conditions in the area are hotter/drier than the coastal redwood zone; therefore, the 1.3-mile assessment area was used for this Project. The following briefly discusses the history of the known territory:

NAP0013: According to the database, this territory was first found active in 1990 with a pair of NSOs. The territory was monitored and found active from 1990 – 2012 except for 1995, 1999 - 2001, and 2009 when no known monitoring occurred. The Activity Center (AC) is located within the area of the 2011 detection of a pair. The database does not have information beyond 2012, nor are monitoring efforts known.

Northern Spotted Owl Habitat

The attributes of northern spotted owl habitat include a forest with:

- Dense, multi-layered canopy of several tree species (conifers and hardwoods).
- Trees of varying sizes and ages.
- Abundant logs, snags/cavity trees, and trees with broken tops or platform-like substrates (i.e., broken tops, mistletoe, debris piles, or old raptor/squirrel nests).
- Open spaces among lower branches to allow flight under the canopy.

The specific definitions of NSO habitat from USFWS include:

- High-Quality Nesting/Roosting Habitat: Mixed tree species with a basal area of 210+ ft² and ≥ 15 " quadratic mean diameter, and ≥ 8 trees per acre of trees ≥ 26 " in diameter at breast height, and $\geq 60\%$ canopy closure.
- Suitable Nesting/Roosting Habitat: Mixed tree species with basal area ranging from 150 - 180+ ft² and ≥ 15 " quadratic mean diameter, and ≥ 8 trees per acre of trees ≥ 26 " in diameter at breast height, and $\geq 60\%$ canopy closure.
- Suitable Foraging Habitat: Mixed tree species with basal area ranging from 120 - 180+ ft² and ≥ 13 " quadratic mean diameter, and ≥ 5 trees per acre of trees ≥ 26 " in diameter at breast height, and a mix of $\geq 40\%$ to 100% canopy closure.
- Low Quality Foraging Habitat: Mixed tree species with basal area ranging from 80 - 120+ ft² and ≥ 11 " quadratic mean diameter, and $\geq 40\%$ canopy closure.

Project:

The Property Ownership is located off Petrified Forest Road outside of Calistoga, CA, with the Project proposing to convert 5 separate blocks of second-growth forests into vineyards. The Property Ownership includes buildings, ponds, existing vineyards, Chamise, small forest openings, oak woodlands, conifer stands, and mixed woodlands (Attachment #4). The following describes the Proposed Vineyard Blocks:

Block 27: This Block proposes to convert 2.15 acres gross (1.8 acres net) of oak woodland to vineyard. This block is immediately adjacent to an existing vineyard block (Block D). Due to a lack of conifers, this area would not be considered NSO nesting/roosting habitat and its use as NSO foraging habitat would be limited to non-existent.

Block 18: This Block proposes to convert .34 acres gross (.22 acres net) of second-growth Douglas-fir and small forest opening to a vineyard. This block is primarily a small existing opening with some trees along the edge to be removed. Due to forest structure and location along the ridge top, this block would be considered low-quality NSO foraging habitat to unsuitable (forest opening).

Block 19A: This Block proposes to convert 1.5 acres gross (1.15 acres net) of second-growth Douglas-fir to vineyard, with the southern edge bordering the Chamise vegetation type. This block would be considered suitable foraging NSO habitat; however, due to its location on the ridge top subjecting it to hot/drier conditions, smaller diameter trees, and being adjacent to Chamise, the habitat would be low quality.

Block 19B: This Block proposes to convert .25 acres gross (.16 acres net) of second-growth mixed forest (primarily oaks with some conifers) to vineyard. This block would be considered suitable foraging NSO habitat; however, due to its location on the ridge top subjecting it to hot/drier conditions and thick understory, the habitat would be low quality.

Block19C: This Block proposes to convert .75 acres gross (.50 acres net) of second-growth mixed forest (primarily oaks with few conifers) to vineyard, with the southern boundary bordering the Chamise vegetation type. This block would be considered suitable foraging NSO habitat; however, due to its location on the ridge top subjecting it to hot/drier conditions, thick understory, smaller diameter trees, and being adjacent to Chamise, the habitat would be low quality.

Northern Spotted Owl Surveys

As suitable NSO habitat exists in ¼ mile and within the Project Area; Northern Spotted Owl Surveys are required. Four NSO survey stations provide coverage for this Project (Attachment #5). One station (STA #1) is located on Petrified Forest Road near the confluence of Cyrus Creek. One station (STA #4) not only covers Blocks 19A, 19B, and 19C but also attempts to monitor NAP0013 within Cyrus Creek Drainage. The other two stations (STA #2 and #3) survey the remaining proposed Project and surrounding area.

The last known northern spotted owl detection within the NAP0013 activity center was on 03APR12 with a pair. Surveys from 2023 through 2024 did not detect any NSOs. Great Horned Owls were detected in both years (Attachment #6). **Surveys are valid for the breeding season (01FEB – 31AUG) in which they were completed and must be repeated if timber harvest operations are not completed by 01FEB of the following year.**

NORTHERN SPOTTED OWL SURVEY FORM 2024 Breeding Season

Project/General Location: Fulton - Petrified Forest Road; Calistoga Visit #: 1 Date: 17MAR24
Legal: T08N, R07W, Sec(s): 2 & 3 MDB&M County: Napa

NSO Detection: No **Barred Owl Detection:** No

Surveyor: Scott Butler

Sunset: 1923

Survey Type: Nocturnal 10-minute Point

Weather Description (cloud/wind): Cool, Clear

Station #	Survey Time	Owl Response	Comments
1	2056 – 2106	N/R	Frogs, Cars, and Dogs
2	2111 – 2121	N/R	Water
3	2125 – 2135	N/R	
4	2148 – 2200	N/R	Walked slowly around area - Frogs

Owl Response: N/R = No Response from NSO, V = Vocal Response, O = Observed NSO, B = Both Vocal and Observed, BAR = Barred Owl

Project/General Location: Fulton - Petrified Forest Road; Calistoga

Visit #: 2 Date: 01APR24

Legal: T08N, R07W, Sec(s): 2 & 3 MDB&M

County: Napa

NSO Detection: No Barred Owl Detection: No

Surveyor: Scott Butler

Sunset: 1938

Survey Type: Nocturnal 10-minute Point

Weather Description (cloud/wind): Cool, Clear & Calm

Station #	Survey Time	Owl Response	Comments
1	2114 – 2124	N/R	Cars, dogs and frogs
2	2130 – 2140	N/R	
3	2146 – 2156	V – PYOW	Distant Pygmy Owl, frogs
4	2159 – 2209	N/R	Frogs

Owl Response: N/R = No Response from NSO, V = Vocal Response, O = Observed NSO, B = Both Vocal and Observed, BAR = Barred Owl

Project/General Location: Fulton - Petrified Forest Road; Calistoga

Visit #: 3 Date: 16APR24

Legal: T08N, R07W, Sec(s): 2 & 3 MDB&M

County: Napa

NSO Detection: No Barred Owl Detection: No

Surveyor: Scott Butler & Randall Addison

Sunset: 1952

Survey Type: Nocturnal 10-minute Point

Weather Description (cloud/wind): Partial Clouds and mild

Station #	Survey Time	Owl Response	Comments
1	2208 – 2218	N/R	Frogs, cars and dogs
2	2223 – 2233	N/R	Bat
3	2236 - 2246	N/R	
4	2249 – 2259	V – SWOW & GHOW	Northern saw-whet owl 300' to north Great Horned owl 700' to west

Owl Response: N/R = No Response from NSO, V = Vocal Response, O = Observed NSO, B = Both Vocal and Observed, BAR = Barred Owl

Project/General Location: Fulton - Petrified Forest Road; Calistoga

Visit #: 4 Date: 01MAY24

Legal: T08N, R07W, Sec(s): 2 & 3 MDB&M

County: Napa

NSO Detection: No Barred Owl Detection: No

Surveyor: Randall Addison

Sunset: 2007

Survey Type: Nocturnal 10-minute Point

Weather Description (cloud/wind): Clear

Station #	Survey Time	Owl Response	Comments
1	2245 – 2255	N/R	
2	2323 – 2333	N/R	Road noise in distance
3	2340 – 2350	N/R	Frogs
4	2355 - 0007	V – GHOW	Great Horned Owl 1000' to the North

Owl Response: N/R = No Response from NSO, V = Vocal Response, O = Observed NSO, B = Both Vocal and Observed, BAR = Barred Owl

Project/General Location: Fulton - Petrified Forest Road; Calistoga

Visit #: 5 Date: 15MAY24

Legal: T08N, R07W, Sec(s): 2 & 3 MDB&M

County: Napa

NSO Detection: No Barred Owl Detection: No

Surveyor: Randall Addison

Sunset: 2020

Survey Type: Nocturnal 10-minute Point

Weather Description (cloud/wind): Clear

Station #	Survey Time	Owl Response	Comments
1	2319 – 2329	N/R	Crickets, cars, frogs, dogs
2	2336 – 2346	N/R	Crickets, machinery, frogs
3	2353 – 0003	N/R	Crickets and frogs
4	0006 – 0016	N/R	Crickets

Owl Response: N/R = No Response from NSO, V = Vocal Response, O = Observed NSO, B = Both Vocal and Observed, BAR = Barred Owl

Project/General Location: Fulton - Petrified Forest Road; Calistoga

Visit #: 6 Date: 03JUN24

Legal: T08N, R07W, Sec(s): 2 & 3 MDB&M

County: Napa

NSO Detection: No Barred Owl Detection: No

Surveyor: Randall Addison

Sunset: 2028

Survey Type: Nocturnal 10-minute Point

Weather Description (cloud/wind): Clear

Station #	Survey Time	Owl Response	Comments
1	2232 – 2242	N/R	Frogs and vehicles
2	2247 – 2257	N/R	Vehicle noise, light breeze
3	2302 – 2312	N/R	Crickets and light breeze
4	2315 – 2325	N/R	Crickets

Owl Response: N/R = No Response from NSO, V = Vocal Response, O = Observed NSO, B = Both Vocal and Observed, BAR = Barred Owl

NORTHERN SPOTTED OWL SURVEY FORM 2023 Breeding Season

Project/General Location: Fulton - Petrified Forest Road; Calistoga

Visit #: 1 Date: 17MAR23

Legal: T08N, R07W, Sec(s): 2 & 3 MDB&M

County: Napa

NSO Detection: No Barred Owl Detection: No

Surveyor: Scott Butler

Sunset: 1923

Survey Type: Nocturnal 10-minute Point

Weather Description (cloud/wind): Clear, calm

Station #	Survey Time	Owl Response	Comments
1	2145 – 2155	N/R	Cars
2	2203 – 2213	N/R	Crickets
3	2222 – 2232	N/R	Crickets and frogs

Owl Response: N/R = No Response from NSO, V = Vocal Response, O = Observed NSO, B = Both Vocal and Observed, BAR = Barred Owl

Project/General Location: Fulton - Petrified Forest Road; Calistoga
Legal: T08N, R07W, Sec(s): 2 & 3 MDB&M

Visit #: 2 Date: 30MAR23
County: Napa

NSO Detection: No Barred Owl Detection: No

Surveyor: Scott Butler

Sunset: 1935

Survey Type: Nocturnal 10-minute Point

Weather Description (cloud/wind): Clear & Calm

Station #	Survey Time	Owl Response	Comments
1	2233 – 2243	N/R	Cars
2	2248 – 2258	N/R	
3	2304 – 2314	N/R	

Owl Response: N/R = No Response from NSO, V = Vocal Response, O = Observed NSO, B = Both Vocal and Observed, BAR = Barred Owl

Project/General Location: Fulton - Petrified Forest Road; Calistoga
Legal: T08N, R07W, Sec(s): 2 & 3 MDB&M

Visit #: 3 Date: 12APR23
County: Napa

NSO Detection: No Barred Owl Detection: No

Surveyor: Scott Butler

Sunset: 1948

Survey Type: Nocturnal 10-minute Point

Weather Description (cloud/wind): Clear, calm and cold

Station #	Survey Time	Owl Response	Comments
1	2236 – 2246	N/R	Cars, dogs
2	2250 - 2300	N/R	
3	2305 – 2315	N/R	Skunk

Owl Response: N/R = No Response from NSO, V = Vocal Response, O = Observed NSO, B = Both Vocal and Observed, BAR = Barred Owl

Project/General Location: Fulton - Petrified Forest Road; Calistoga
Legal: T08N, R07W, Sec(s): 2 & 3 MDB&M

Visit #: 4 Date: 27APR23
County: Napa

NSO Detection: No Barred Owl Detection: No

Surveyor: Randall Addison

Sunset: 2002

Survey Type: Nocturnal 10-minute Point

Weather Description (cloud/wind): Clear & Calm

Station #	Survey Time	Owl Response	Comments
1	2232 – 2242	N/R	Frogs, Cars
2	2246 – 2256	N/R	Crickets
3	2300 – 2310	N/R	Frogs
Visit #1			
Added 4	2312 – 2332	N/R	Walking along the ridge

Owl Response: N/R = No Response from NSO, V = Vocal Response, O = Observed NSO, B = Both Vocal and Observed, BAR = Barred Owl

Project/General Location: Fulton - Petrified Forest Road; Calistoga
Legal: T08N, R07W, Sec(s): 2 & 3 MDB&M

Visit #: 5 Date: 11MAY23
County: Napa

NSO Detection: No Barred Owl Detection: No

Surveyor: Scott Butler

Sunset: 2016

Survey Type: Nocturnal 10-minute Point

Weather Description (cloud/wind): Clear with light breeze and cool

Station #	Survey Time	Owl Response	Comments
1	2247 – 2257	N/R	Cars and fox
2	2302 - 2312	N/R	
3	2316 – 2326	V – PYOW	Pygmy Owl Very Vocal
Visit #2			
4	2328 – 2349	N/R	Quiet

Owl Response: N/R = No Response from NSO, V = Vocal Response, O = Observed NSO, B = Both Vocal and Observed, BAR = Barred Owl

Project/General Location: Fulton - Petrified Forest Road; Calistoga
Legal: T08N, R07W, Sec(s): 2 & 3 MDB&M

Visit #: 6 Date: 02JUN23
County: Napa

NSO Detection: No **Barred Owl Detection:** No

Surveyor: Scott Butler

Sunset: 2027

Survey Type: Nocturnal 10-minute Point

Weather Description (cloud/wind): Clear and calm and cool

Station #	Survey Time	Owl Response	Comments
1	0009 – 0019	N/R	Cars
2	0023 – 0033	V – GHOW, PYOW	Pygmy Owl and Great Horned Owl Cat and Crickets
3	0037 – 0047	N/R	Full Moon
Visit #3			
4	0050 – 0100	N/R	Bright moon

Owl Response: N/R = No Response from NSO, V = Vocal Response, O = Observed NSO, B = Both Vocal and Observed, BAR = Barred Owl

Project/General Location: Fulton - Petrified Forest Road; Calistoga
Legal: T08N, R07W, Sec(s): 2 & 3 MDB&M

Station #: 4
County: Napa

NSO Detection: No **Barred Owl Detection:** No

Surveyor: Scott Butler

Sunset:

Survey Type: Nocturnal 10-minute Point

Weather Description (cloud/wind):

Station #	Survey Time	Owl Response	Comments
Visit #4	25JUN23		
4	2054 – 2104	N/R	Clear and quiet
Visit #5	21JUL23		
4	2030 – 2044	N/R	Clear and Quiet
Visit #6	15AUG23		
4	2000 – 2015	N/R	Cloudy and Quiet

Owl Response: N/R = No Response from NSO, V = Vocal Response, O = Observed NSO, B = Both Vocal and Observed, BAR = Barred Owl

Northern Spotted Owl Protection Measures

The Project Area will remove less than 5 acres of low-quality northern spotted owl habitat. The Project Area is within ¼ mile of suitable NSO nesting/roosting habitat. Block 19C is located within .3 miles of a historic Northern Spotted Owl Activity Center (NAP013). The following Protection Measures are recommended:

- Northern Spotted Owl Protocol Surveys are required in each year before timber harvest operations occur.
 - Year 1 = 2023 – 6 survey visits completed with no NSOs detected
 - Year 2 = 2024 – 6 survey visits completed with no NSOs detected
 - Year 3 = 2025 – At least 3 survey visits are required before timber harvest operations.
- If a northern spotted owl is detected during surveys, a qualified wildlife biologist will be contacted to determine if harvest and seasonal restrictions are required.

Attachments

Attachment #1 – Map of Project Area and NSOs within 1.3 miles

Attachment #2 – Engineers Project Map Description

Attachment #3 – NSO Database Reports

Attachment #4 – Project Area Aerial Photo

Attachment #5 – NSO Survey Stations

Attachment #6 – Large Owl Detections

Additional Information

Northern Spotted Owl Contact Information:

Questions or comments regarding this NSO information can be directed to:

Pamela Town
Consulting Wildlife Biologist & SOE
Forest Ecosystem Management, PLLC
(406) 490-7427
Pamtown30@gmail.com

References:

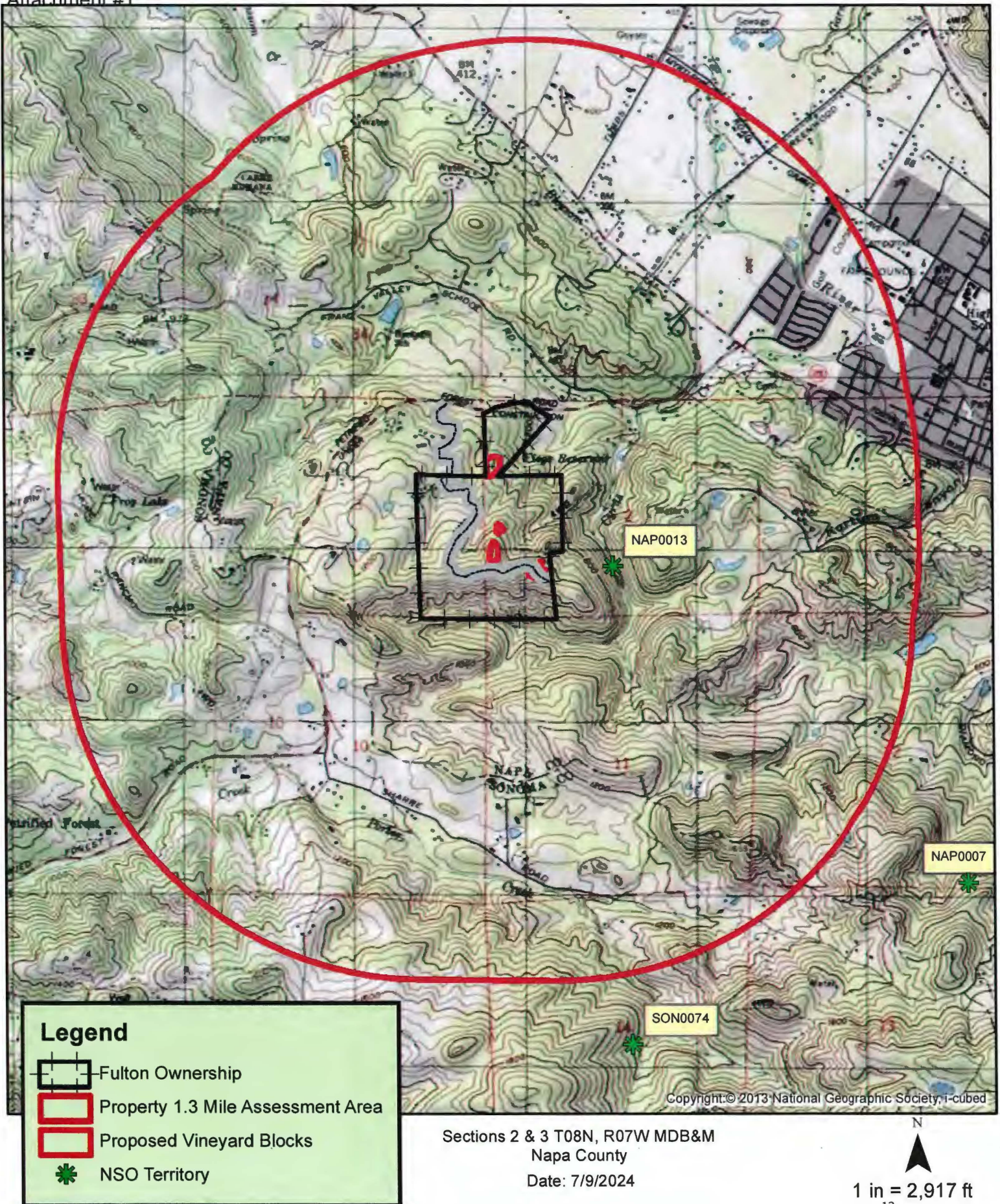
Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls. Endorsed by the U.S. Fish & Wildlife Service. February 2, 2011 and Revised January 9, 2012.

Northern Spotted Owl Viewer (BIOS CA Natural Diversity Database). Managed by California Department of Fish & Wildlife.

Zeiner, D.C., W.F. Laudenslayer, K.E. Mayer, and M. White, eds. 1988 – 1990. California's Wildlife. Vol. I – III. California Department of Fish & Game, Sacramento, CA.

Fulton Project - NSOs within 1.3 Mile Assessment Area

Attachment #1



Data Version Date:
05/29/2024
Report Generation Date:
7/9/2024

Report #1 - Spotted Owl Sites Found
Known Spotted Owl sites having observations
within the search area.



Meridian, Township, Range, Section (MTRS) searched:

M_09N_07W Sections(25,26,27,28,33,34,35,36);

M_08N_07W Sections(01,02,03,04,09,10,11,12,13,14,15,16);

M_08N_06W Sections(06,07,18);

M_09N_06W Sections(30,31);

NOTES:

Fulton Project

Masterowl	Subspecies	LatDD NAD83	LonDD NAD83	MTRS	AC Coordinate Source
NAP0001	NORTHERN	38.539867	-122.546050	M 08N 06W 17	Contributor 4.9M
NAP0007	NORTHERN	38.553044	-122.580998	M 08N 07W 12	Contributor 2.2M
→ NAP0013	NORTHERN	38.569601	-122.604975	M 08N 07W 02	Contributor 28
SON0074	NORTHERN	38.544597	-122.603832	M 08N 07W 14	Contributor 24M

Owls within
1.3 Miles
NAP0013
28M to Property Boundary
3M to Project Boundary

Date Version Date:
05/29/2024
Report Generation Date:
7/9/2024

Report #2 - Observations Reported

List of observations reported by site.



Meridian, Township, Range, Section (MTRS) searched:

M_09N_07W Sections(25,26,27,28,33,34,35,36);

M_08N_07W Sections(01,02,03,04,09,10,11,12,13,14,15,16);

M_08N_06W Sections(06,07,18);

M_09N_06W Sections(30,31);

NOTES:

Fulton Project

Only Relevant
Pages are
included

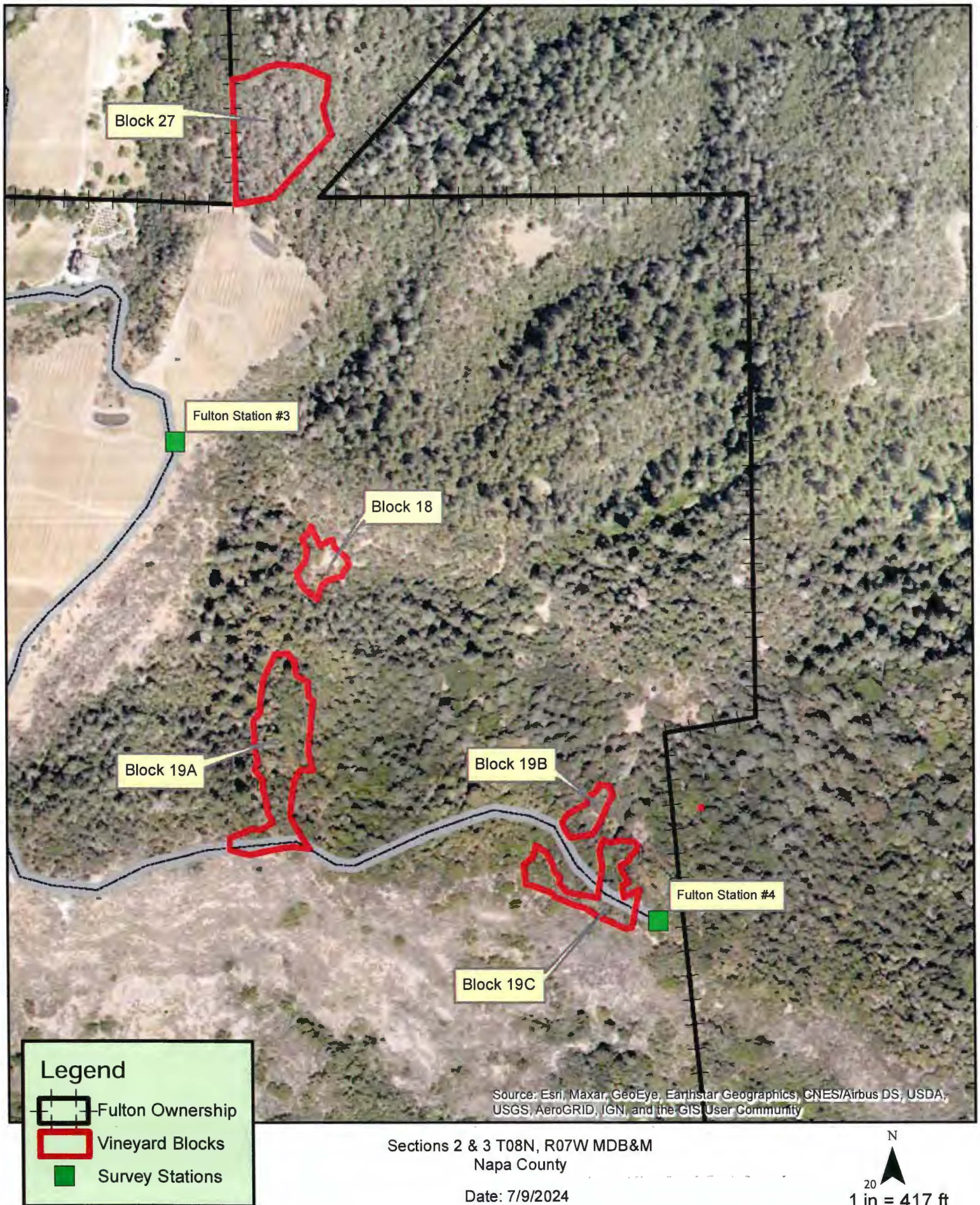
NAP 2013
AC = 2011 Pair
2012 ~ Pair
[In Cyrus]
2023 > N/R
2024 > N/R

Type	Date	Time	#Adults	Age/Sex	Pair	Nest	#Young	Latitude DD NAD83	Longitude DD NAD83	MTRS	Coordinate Source
Masterowl: NAP0013 Subspecies: NORTHERN											
POS	1990-01-04	1643	1	UM				38.563206	-122.608872	M 08N 07W 11	Quarter-section centroid
POS	1990-02-24	2340	1	UM	Y			38.563206	-122.608872	M 08N 07W 11	Quarter-section centroid
POS	1990-02-24	2340	1	UF	Y			38.563206	-122.808872	M 08N 07W 11	Quarter-section centroid
POS	1990-11-18	1323	1	UF				38.569814	-122.604290	M 08N 07W 02	Half-section centroid
POS	1991-02-01	1952	2	UMUF	Y			38.565064	-122.606704	M 08N 07W 11	Contributor
POS	1991-06-26		1	UM				38.569731	-122.608871	M 08N 07W 02	Quarter-section centroid
POS	1991-06-26	1900	2	UMUF	Y			38.565064	-122.606704	M 08N 07W 11	Contributor
POS	1991-09-29	2000	1	UF				38.563463	-122.599768	M 08N 07W 11	Quarter-section centroid
POS	1991-09-29		1	UM				38.569731	-122.608871	M 08N 07W 02	Quarter-section centroid
POS	1991-11-22	1910	1	UF				38.563463	-122.599768	M 08N 07W 11	Quarter-section centroid
POS	1991-11-22	1910	1	UM				38.563206	-122.608872	M 08N 07W 11	Quarter-section centroid
POS	1991-12-23		2	UMUF	Y			38.563206	-122.608872	M 08N 07W 11	Quarter-section centroid
POS	1992-01-13		1	UF				38.565064	-122.606704	M 08N 07W 11	Contributor
POS	1993-04-03	1918	2	UMUF				38.569814	-122.604290	M 08N 07W 02	Half-section centroid
POS	1993-05-01	0900	2	UMUF				38.563335	-122.604314	M 08N 07W 11	Half-section centroid
POS	1994-04-16	1703	2	UMUF	Y	Y		38.559676	-122.604392	M 08N 07W 11	Section centroid

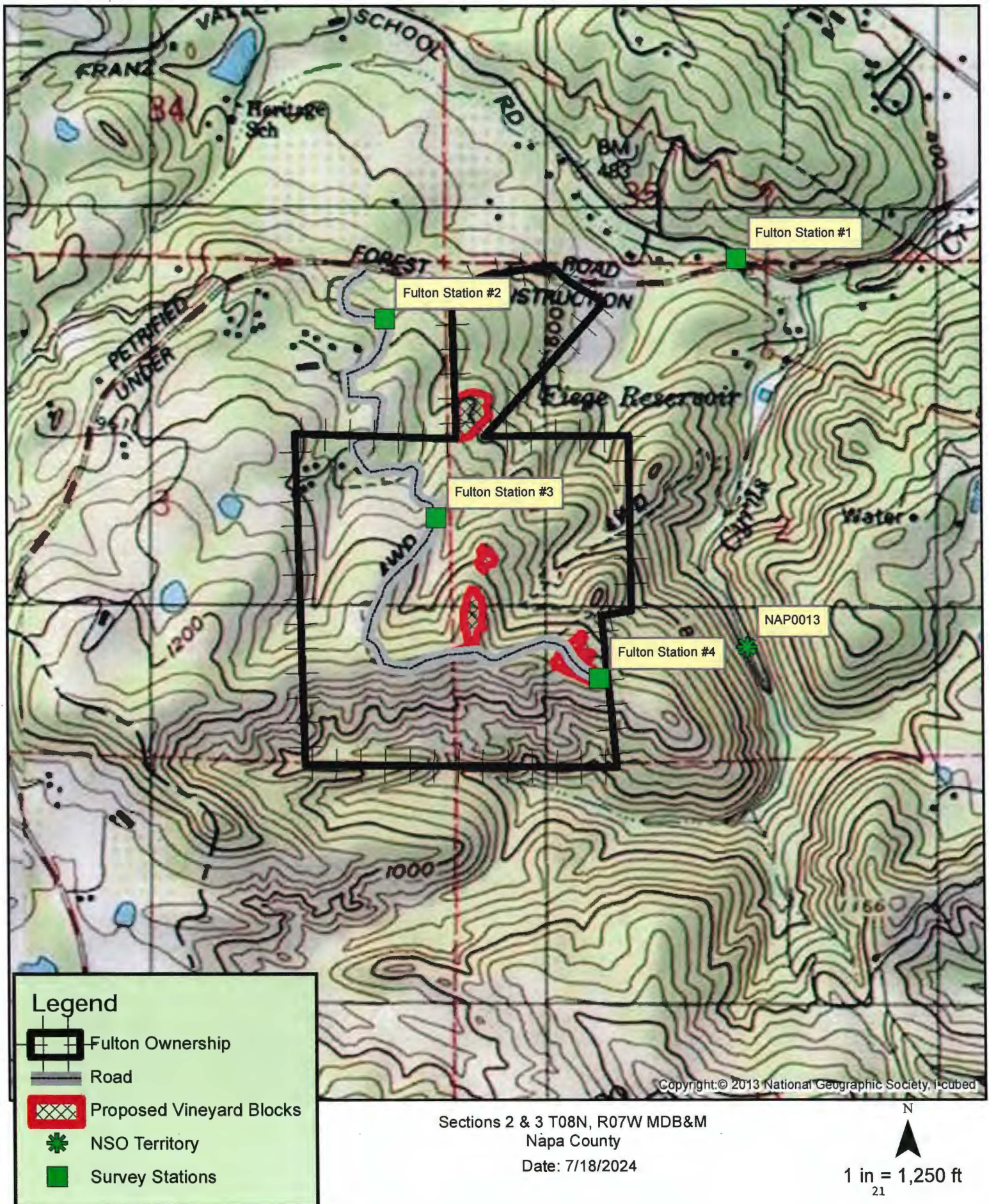
Type	Date	Time	#Adults	Age/Sex	Pair	Nest	#Young	Latitude DD NAD83	Longitude DD NAD83	MTRS	Coordinate Source
POS	1996-06-09	0850	2	UMUF	Y			38.563206	-122.608872	M 08N 07W 11	Quarter-section centroid
NEG	1997-05-08	1118	0					38.559676	-122.604392	M 08N 07W 11	Section centroid
POS	1997-05-25	2131	1	UM				38.563463	-122.599768	M 08N 07W 11	Quarter-section centroid
POS	1998-08-19	2031	1	UM				38.563463	-122.599768	M 08N 07W 11	Quarter-section centroid
NEG	1999-11-26	1715	0					38.559676	-122.604392	M 08N 07W 11	Section centroid
POS	2002-02-10	1802	2	UMUF	Y			38.564954	-122.606016	M 08N 07W 11	Contributor
POS	2002-04-28	2120	1	UF				38.563206	-122.608872	M 08N 07W 11	Quarter-section centroid
POS	2003-01-01	0244	1	UU				38.563206	-122.608872	M 08N 07W 11	Quarter-section centroid
NEG	2004-02-21	1028	0					38.559676	-122.604392	M 08N 07W 11	Section centroid
POS	2004-05-12	2309	2	UMUF	Y			38.569889	-122.599710	M 08N 07W 02	Quarter-section centroid
POS	2005-02-28	1842	1	UM				38.569889	-122.599710	M 08N 07W 02	Quarter-section centroid
POS	2006-06-24	2056	2	UMUF	Y			38.569889	-122.599710	M 08N 07W 02	Quarter-section centroid
POS	2006-06-27	1342	1	UF				38.569731	-122.608871	M 08N 07W 02	Quarter-section centroid
POS	2007-04-14	1950	2	UMUF				38.569889	-122.599710	M 08N 07W 02	Quarter-section centroid
POS	2008-03-07	1028	1	UM				38.564638	-122.601638	M 08N 07W 11	Contributor
POS	2010-11-16	1548- 1555	1	UM				38.559851	-122.598378	M 08N 07W 11	Contributor
AC	2011-04-19	1937	2	UMUF	Y			38.569601	-122.604975	M 08N 07W 02	Contributor

Type	Date	Time	#Adults	Age/Sex	Pair	Nest	#Young	Latitude DD NAD83	Longitude DD NAD83	MTRS	Coordinate Source
NEG	2011-04-19	2014- 2024	0					38.557350	-122.602850	M 08N 07W 11	Contributor
NEG	2011-04-19	1955- 2005	0					38.564233	-122.599066	M 08N 07W 11	Contributor
NEG	2011-04-19	2031- 2041	0					38.555566	-122.602916	M 08N 07W 11	Contributor
NEG	2012-04-03	1651- 1701	0					38.569667	-122.593183	M 08N 07W 01	Contributor
POS	2012-04-03	1609	2	UMUF	Y			38.566515	-122.605536	M 08N 07W 11	Contributor
Masterowl: SON0074 Subspecies: NORTHERN											
POS	1993-06-21	2245	1	UM				38.542088	-122.599979	M 08N 07W 14	Quarter-section centroid
POS	1993-06-22	0456	1	UM				38.543495	-122.597756	M 08N 07W 14	Contributor
POS	1993-07-06	2240	1	UF				38.544597	-122.603832	M 08N 07W 14	Contributor
POS	1993-07-06	2120	1	UM				38.545333	-122.608303	M 08N 07W 14	Contributor
POS	1993-07-07	0500	1	UM				38.545333	-122.608303	M 08N 07W 14	Contributor
AC	1993-07-07	0500	1	UF				38.544597	-122.603832	M 08N 07W 14	Contributor
POS	1994-02-14	1810	1	UM				38.542088	-122.599979	M 08N 07W 14	Quarter-section centroid
Additional surveys within the search area with no Spotted Owls detected											
NEG	2014-08-27	2040- 2052	0					38.570340	-122.574962	M 08N 06W 06	Contributor

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Fulton Project - NSO Survey Stations



Fulton Project - Large Owl Detections

