

**Bishop Creek Progress Report 2:  
APPENDIX B - INVASIVE PLANT TECHNICAL MEMO**

**MEMORANDUM**

April 14, 2020

**To:**Mr. Finlay Anderson  
Kleinschmidt Group**From:**Brad R. Blood, PhD  
Allison Rudalevige  
Psomas  
Edith Read, PhD  
E Read and Associates**Subject:** Results of Invasive Plant Surveys for the Bishop Creek Hydroelectric Power Project (FERC No. 1394–080) Relicensing, Inyo County, California

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This memorandum presents the results of the 2019 invasive plant surveys in support of relicensing efforts for the Bishop Creek Hydroelectric Power Project (Federal Energy Regulatory Commission [FERC] Project No. 1394–080) (hereinafter referred to as the “Project”). The Project is located along Bishop Creek southwest of the City of Bishop in Inyo County, California (Exhibit 1, Project Vicinity).

**PROJECT BACKGROUND**

Southern California Edison Company (SCE) is the licensee, owner, and operator of the existing hydroelectric facilities subject to the relicensing effort. The Project is predominantly located on Bishop Creek and includes facilities on Birch and McGee Creeks. SCE operates the Project under a 30-year license issued by FERC on July 19, 1994. As the current license is due to expire on June 30, 2024, SCE has initiated a formal relicensing process utilizing using FERC’s Integrated Licensing Process. No changes in Project operations or existing facilities are anticipated if a new license were issued.

In advance of filing the Notice of Intent (NOI) and Pre-Application Document (PAD), SCE, Kleinschmidt, Psomas, and others have worked with stakeholders to identify necessary studies, with the goal of accelerating FERC’s ability to issue a Study Plan Determination. Efforts began more than one year prior to formal initiation of the process with FERC, through a series of Technical Working Group meetings held in Bishop, California. FERC issued the Study Plan Determination on November 4, 2019.

During the Technical Working Group meetings, stakeholders identified the need to conduct a study to classify and map the existing populations of invasive plants within the Project boundary. This analysis would be followed by an assessment of the potential for adverse impacts to the native ecosystem by the spread of these plants and ensure future operations of the Project are consistent with the Land Management Plan for the Inyo National Forest (USDA 2018).

**Environmental Setting**

The Project facilities lie in the Owens Valley and along the eastern slope of the Sierra Nevada mountains. The Project facilities include powerhouses, dams, impoundments (including South Lake and Lake Sabrina), diversions, weirs, outbuildings, valve houses, access roads, and a flowline. The Project's facilities are situated along Bishop Creek and its tributaries including South Fork, Middle Fork, Green Creek, Birch Creek, and McGee Creek. Bishop Creek is tributary to the Owens River. Project facilities occur across privately and federally held properties (federal lands include those held and managed by the US Forest Service [USFS] and US Bureau of Land Management [BLM]). Land uses adjacent to the

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Project also vary and include residential, grazing, public recreation, and federally-designated Wilderness land.

The Project area is typified by moderate to steep ridge and valley topography. Elevations within the drainages range from approximately 4,000 feet above mean sea level (msl) to over 13,000 feet above msl. Bishop Creek is a major stream with a total drainage area of approximately 70 square miles, flowing northeastward approximately 28 miles from its headwaters in the Sierra Nevada to its confluence with the Owens River at the City of Bishop. The North, Middle, and South Forks of Bishop Creek originate in nearby glacial basins separated by ridges. South Lake and Lake Sabrina are the major storage reservoirs in the watershed.

**Survey Locations**

Table 1 lists each Project facility, its elevation, and its surrounding plant communities/landcovers included in the invasive plant survey.

**TABLE 1  
 BISHOP CREEK HYDROELECTRIC PROJECT  
 INVASIVE PLANT SURVEY AREAS**

<b>Project Facilities</b>	<b>Elevation</b>	<b>Surrounding Plant Communities</b>
South Lake (Hillside) Dam	9,765 ft	Barren, Basin Sagebrush, Subalpine Conifers, Lodgepole Pine
Sabrina Lake Dam	9,145 ft	Quaking Aspen, Basin Sagebrush, Urban-related Bare Soil, Perennial Lake or Pond
McGee Creek Diversion	9,206 ft	Quaking Aspen, Eastside Pine, Great Basin Mixed Scrub
Birch Creek Diversion	8,319 ft	Quaking Aspen, Eastside Pine, Great Basin Mixed Scrub
Green Creek Diversion	10,272 ft	Quaking Aspen, Subalpine Conifers, Barren
Bishop Creek South Fork Diversion Dam	8,224 ft	Quaking Aspen, Basin Sagebrush, Curleaf Mountain Mahogany
Bishop Creek Intake 2 Dam	8,110 ft	Quaking Aspen, Basin Sagebrush, Great Basin Mixed Scrub, Perennial Lake or Pond
Bishop Creek Powerhouse No. 2 and Intake 3	7,147 ft	Eastside Pine, Bitterbush, Basin Sagebrush, Singleleaf Pinyon Pine, Urban-related Bare Soil, Perennial Lake or Pond
Bishop Creek Powerhouse No. 3 and Intake 4	6,311 ft	Eastside Pine, Great Basin Mixed Scrub, Bitterbush, Urban-related Bare Soil, Perennial Lake or Pond
Bishop Creek Powerhouse No. 4 and Intake 5	5,183 ft	Blackbush, Eastside Pine, Great Basin – Desert Mixed Scrub, Riparian Mixed Hardwood, Urban-related Bare Soil, Perennial Lake or Pond
Bishop Creek Powerhouse No. 5 and Intake 6	4,781 ft	Great Basin – Desert Mixed Scrub, High Desert Mixed Scrub, Urban-related Bare Soil, Perennial Lake or Pond
Bishop Creek Powerhouse No. 6	4,516 ft	High Desert Mixed Scrub, Saltbush, Willow

The Project consists of 13 dams/diversions and 5 powerhouses with a combined generating capacity of 28.565 megawatts (MW). The Project diverts water for power generation from the Middle and South forks of Bishop Creek, McGee Creek and Birch Creek through the five powerhouses and associated intakes as follows: (1) Powerhouse No. 2, immediately below the confluence of the Middle and South

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forks of Bishop Creek; (2) Powerhouse No. 3, 3 miles below Powerhouse No. 2; (3) Powerhouse No. 4, approximately 3 miles below Powerhouse No. 3; (4) Powerhouse No. 5, approximately 1 mile below Powerhouse No. 4; and (5) Powerhouse No. 6, approximately 2 miles below Powerhouse No. 5.

### *Reservoirs*

**South Lake** is operated as a store and release facility for water storage and downstream hydroelectric generation. South Lake holds and releases spring runoffs to allow for regulated flows during the summer months to the powerhouses, and also provides opportunities for water recreation. South Lake has a net storage capacity of 12,883 acre-foot at normal full pool elevation 9,751.3 feet msl. The surface area of the reservoir when full is approximately 173 acres. The flow is regulated with an unlined tunnel with a capacity of 178 cubic feet per second (cfs). The submerged outlet tunnel intake portal is located approximately 1,200 feet upstream of the dam.

**Lake Sabrina** has a net storage capacity of approximately 8,376 acre-feet at normal maximum reservoir level elevation 9,131.62 feet msl. The surface area of the reservoir when full is approximately 184 acres. Water is released to the downstream channel via low-level outlets; the intake is a fully submerged concrete box supporting three steel trash racks that is integral with the upstream side the dam. The invert of the intake is at elevation 9,067.42 feet msl.

### *Dams and Diversions*

**Green Creek Diversion** is located 0.8 mile east northeast of the Hillside Dam (South Lake) spillway. A wooden head gate, 3 feet long by 2 feet high, is located approximately 80 feet downstream from Bluff Lake on Green Creek. The head gate diverts water into an open channel approximately 1,400 feet in length to the Green Creek diversion intake. The diversion is earth and rockfill, located at 10,264 feet msl, approximately 51 feet along the crest and 9 feet above the streambed. The diversion is equipped with a 12.5-foot-wide by 1-foot-deep spillway. The intake consists of a 16-inch diameter steel pipe with a slide gate and a trash rack. A 16-inch diameter drainpipe passes through the intake chamber which is constructed of concrete masonry. A 16-inch diameter steel pipe, approximately 4,750 feet long, extends into a natural channel, 1,150 feet in length, and carries water to South Lake.

**South Fork Diversion** is earth and rockfill with a crest elevation at 8,211 feet msl, crest length of approximately 65 feet, and crest height of 10 feet above the streambed. The diversion is equipped with a 40-foot wide by 6-foot deep spillway. A 38-inch diameter steel pipe with a gate valve and trash rack comprises the outlet. The spillway height may be raised or lowered with 4 inch by 6-inch flashboards, each 4 feet in length. A 12-inch diameter drainpipe passes through the base of the intake chamber and a 36-inch diameter drainpipe passes through the diversion. The flowline consists of approximately 4,104 feet of 38-inch diameter steel pipe connected to 4,059 feet of 34-inch diameter steel pipe. The flowline extends from the South Fork diversion to Intake No. 2 reservoir. The flowline is protected with air valves, expansion joints, a sand box and a sand trap. The sand box is concrete lined, and approximately 17 feet by 24 feet with exit to a 38-inch diameter steel pipe extending to Intake No. 2. The sand box has two drain gates.

**Hillside Dam** is an 81.5-foot-high rockfill timber face (covered with geomembrane) dam completed in 1910 to enlarge an existing natural lake (South Lake). The crest is 645 feet long and is at an elevation of 9,757.6 feet msl. There is a 40-foot spillway, and a 1,900-foot unlined outlet tunnel that discharges into the South Fork of Bishop Creek, 600 feet downstream of the dam. The reservoir is operated as a

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regulating reservoir for a series of hydroelectric powerhouses including Bishop Creek Powerhouses 2 through 6.

**Weir Lake Weir**, located approximately 1,800 feet below Hillside Dam, is used for flow monitoring. Weir Lake Weir, also known as South Lake Weir, is a structure of concrete approximately 70 feet long and varying in height from 2 feet to 4 feet. The weir is 25 feet wide by 1 foot high.

**Sabrina Dam** and associated facilities consist of a 70-foot by 900-foot timber face (covered with geomembrane) rockfill dam, an uncontrolled main spillway formed by an ogee crest, an uncontrolled auxiliary spillway formed by a concrete wall, and three low-level outlets. The dam forms Lake Sabrina, which is operated as a regulating reservoir for a series of hydroelectric powerhouses which include Bishop Creek Powerhouses 2 through 6.

**Longley Dam** is an earth and rockfill dam constructed with a reinforced concrete core wall. The dam has a crest elevation of 10,708 feet msl, crest length of 120 feet, and crest height of 27 feet above streambed. The upstream face of the dam has a slope of 2 to 1 and the downstream face has a slope of 1.5 to 1. There are two 8-inch diameter steel outlet pipes encased in concrete which pass through the base of the dam. Flow is controlled by two 10-inch gate valves. The spillway is 8 feet wide by 2 feet deep. The spillway channel is excavated in 8-foot-wide solid rock where water is diverted into McGee Creek. Due to its remote, high-elevation location and access only on foot or by helicopter, the Longley Dam area was considered to have low potential for spread of invasive plants and therefore not included in the surveys.

**Intake No. 2 Dam** is an earthfill dam standing 41 feet high and 443 feet long, with a concrete core wall extending over approximately half its length. The concrete core wall is discontinued on the right side of the dam where the dam is less than 20 feet high. There is a service spillway with an ogee crest and an auxiliary spillway with an ungated concrete ogee crest, two low-level outlet conduits, and one intake structure. Water is conveyed to Flowline/Penstock No. 2 through a 48-inch diameter steel pipe that passes under the dam near the left abutment. The steel pipe connects to a second hydraulically operated, 48-inch diameter butterfly valve located in a small building at the downstream toe of the dam. The butterfly valve controls flow through a 48-inch to 60-inch diameter expansion to the 60-inch diameter flowline to Bishop Creek Powerhouse No. 2. The valves are normally open but are operable remotely from the SCE's Bishop Control Center located next to Powerhouse No. 4.

A 24-inch diameter sand sluice pipe runs parallel to the 48-inch diameter pipe and passes under the dam. A 20-inch fish-water release pipe branches off the 24-inch sluice line directly above the valve house. The fish-water release piping was reconfigured and a new acoustic velocity meter (AVM) to measure flow was installed in 2008 to monitor and record minimum flow releases.

**Intake No. 3 Dam:** 20-foot by 225-foot concrete arch; 40-foot by 3.5-foot spillway; 60 inch by 6,421-foot-long steel pipe; 60-inch by 6,209-foot steel pipe; 54-foot to 48-inch by 4,673-foot penstock.

**Intake No. 4 Dam:** 28-foot by 323-foot concrete arch; 50-foot by 5-foot spillway; 60-foot steel intake pipe; 60-inch by 6,242-foot steel pipeline; 30-foot by 24-inch by 5,314-foot penstock; 30-inch by 5,665-foot penstock.

**Intake No. 5 Dam:** 20-foot by 275-foot concrete; 60-inch by 3-foot spillway; 60-foot steel pipe; 60-inch by 2,933-foot steel pipe; 60-inch by 540-foot concrete pipe; two 42-inch by 4,800-foot penstocks.

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**Intake No. 6 Dam:** 26-inch by 320-foot concrete dam; 6-foot spillway; 3,000-foot steel pipe; 54-inch by 4,360-foot penstock.

**Diversions Pipe:** The Birch-McGee Diversions pipe connects to the lower end of Flowline No. 2. This 24-inch diameter steel pipe conveys water from Birch and McGee creeks to Flowline No. 2. The rated capacity of the Birch-McGee Diversions pipe is approximately 40 cfs. The flowline collects water from the following:

- Birch-McGee Diversions: a 6-foot by 22-foot stone and concrete diversions dam; a 22-inch steel pipe connects to Penstock 2 above Powerhouse 2.
- McGee Creek Diversions is a 6-foot by 22-foot concrete dam on McGee Creek, with a 12-foot by 1-foot spillway. Water is diverted into an 18-inch steel outlet pipe and into a flowline, which discharges into Birch Creek above the Birch Creek Diversions.

## METHODS

### Definitions

For the purposes of this document, a non-native, invasive plant species is considered to be a species that (1) is non-native to, yet can spread into, wildland ecosystems in California, and that also (2) displaces native species, hybridizes with native species, alters biological communities, or alters ecosystem processes (Cal-IPC 2019). The California Invasive Plant Council (Cal-IPC) categorizes plants as high, moderate, or limited according to the degree of ecological impact in California:

- High – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.
- Moderate – These species have substantial and apparent, but generally not severe, ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.
- Limited – These species are invasive but ecological impacts are minor on a statewide level (or not enough information to justify a higher score). Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

### Literature Review

Cal-IPC was queried to obtain a list of non-native, invasive plant species based on two parameters:

- Jepson region: geographic floristic provinces and subdivisions within California as described by the Jepson Manual (Baldwin et al. 2012).
- Habitat types: a comparison with vegetation alliances within one mile of the Project; three habitat types were selected (grassland, riparian, and woodland).

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The query of the Cal-IPC (2019) yielded a list of 57 species that have the potential to occur in the Project vicinity (Table 2).

**TABLE 2  
 CAL-IPC LISTED INVASIVE PLANT SPECIES POTENTIALLY  
 OCCURRING  
 IN THE PROJECT STUDY AREA**

Scientific Name	Common Name	Cal-IPC Rating
<i>Agrostis stolonifera</i>	creeping bent	Limited
<i>Ailanthus altissima</i>	tree of heaven	Moderate
<i>Arundo donax</i>	giant reed	High
<i>Asparagus asparagoides</i>	bridal creeper	Moderate
<i>Avena barbata</i>	slender wild oat	Moderate
<i>Avena fatua</i>	wild oat	Moderate
<i>Bassia hyssopifolia</i>	five-hook bassia	Limited
<i>Brassica tournefortii</i>	Sahara mustard	High
<i>Bromus diandrus</i>	ripgut grass	Moderate
<i>Bromus japonicus</i>	Japanese brome	Limited
<i>Bromus rubens</i>	red brome	High
<i>Bromus tectorum</i>	cheat grass	High
<i>Centaurea diffusa</i>	diffuse knapweed	Moderate
<i>Centaurea melitensis</i>	toocalote	Moderate
<i>Centaurea solstitialis</i>	yellow star-thistle	High
<i>Cirsium arvense</i>	Canada thistle	Moderate
<i>Cirsium vulgare</i>	bull thistle	Moderate
<i>Conium maculatum</i>	poison-hemlock	Moderate
<i>Cotoneaster</i> spp.	cotoneaster	Moderate
<i>Cynodon dactylon</i>	Bermuda grass	Moderate
<i>Dactylis glomerata</i>	orchard grass	Limited
<i>Descurainia sophia</i>	tansy mustard	Limited
<i>Digitalis purpurea</i>	foxglove	Limited
<i>Dipsacus fullonum</i>	wild teasel	Moderate
<i>Dittrichia graveolens</i>	stinkwort	Moderate
<i>Elaeagnus angustifolia</i>	Russian olive	Moderate
<i>Erodium cicutarium</i>	redstem filaree	Limited
<i>Festuca arundinacea</i>	tall fescue	Moderate
<i>Foeniculum vulgare</i>	fennel	Moderate
<i>Halogeton glomeratus</i>	saltlover	Moderate
<i>Helminthotheca echioides</i>	bristly ox-tongue	Limited
<i>Hirschfeldia incana</i>	short-pod mustard	Moderate
<i>Holcus lanatus</i> *	common velvet grass	Moderate
<i>Hordeum murinum</i>	wall barley	Moderate
<i>Lepidium latifolium</i>	perennial pepperweed	High
<i>Marrubium vulgare</i>	horehound	Limited

**TABLE 2**  
**CAL-IPC LISTED INVASIVE PLANT SPECIES POTENTIALLY**  
**OCCURRING**  
**IN THE PROJECT STUDY AREA**

Scientific Name	Common Name	Cal-IPC Rating
<i>Plantago lanceolata</i>	English plantain	Limited
<i>Poa pratensis</i> ssp. <i>pratensis</i>	Kentucky blue grass	Limited
<i>Polypogon monspeliensis</i>	rabbitsfoot grass	Limited
<i>Rhaponticum repens</i> (formerly <i>Acroptilon repens</i> )	Russian knapweed	Moderate
<i>Ricinus communis</i>	castor bean	Limited
<i>Robinia pseudoacacia</i>	black locust	Limited
<i>Rubus armeniacus</i>	Himalayan blackberry	High
<i>Rumex acetosella</i>	sheep sorrel	Moderate
<i>Rumex crispus</i>	curly dock	Limited
<i>Salsola paulsenii</i>	barbwire Russian thistle	Limited
<i>Salsola tragus</i>	Russian thistle	Limited
<i>Saponaria officinalis</i>	bouncing-bet	Limited
<i>Schismus arabicus</i>	Mediterranean grass	Limited
<i>Sisymbrium irio</i>	London rocket	Limited
<i>Spartium junceum</i>	Spanish broom	High
<i>Stipa miliacea</i> var. <i>miliacea</i>	smilo grass	Limited
<i>Tamarix aphylla</i>	athel	Limited
<i>Tribulus terrestris</i>	puncture vine	Limited
<i>Verbascum thapsus</i>	woolly mullein	Limited
<i>Vinca major</i>	greater periwinkle	Moderate

**Field Survey**

Areas targeted for the invasive plant survey (Exhibit 2, Invasive Plant Survey Area) consisted of Project facilities listed in Table 1 plus an approximate 500-foot survey area buffer surrounding each of the above-listed Project components. The survey area included lakes and streams within the Project boundaries, to the extent that some invasive plants are associated with mesic soils or aquatic habitats. Note: only those areas of lakes and other impoundments within 500 feet of a Project facility were included in the focused survey. Inaccessible areas (i.e., private property or steep topography) were surveyed remotely via binoculars and were not directly accessed.

The invasive plant survey was conducted in June and August 2019. The survey was performed concurrently with a special status plant survey; see Psomas (2020) for detailed results and a complete inventory of species observed in the survey area. Table 3 provides the survey dates for each portion of the Survey Area. Surveys were conducted by walking transects to ensure 100 percent visual coverage of the Survey Area. Plant species listed in Table 2 were targeted during the field survey, but all non-native plant species observed were noted (see compendium in Attachment A). Plant species were identified in the field

or collected for later identification. Plants were identified using taxonomic keys, descriptions, and illustrations in Jepson Flora Project (2019), Baldwin et al. (2012), and Munz (1974). Nomenclature of plant taxa conform to the Jepson eFlora (Jepson Flora Project 2019).

**TABLE 3**  
**INVASIVE PLANT SURVEY DETAILS**

Project Facilities	Survey Date(s)	Approximate Survey Time	Notes
South Lake (Hillside) Dam	August 8, 2019	1445–1645	The northern portion of the Survey Area was inaccessible.
Sabrina Lake Dam	August 7, 2019	0815–1045	The northern portion of the Survey Area was inaccessible.
McGee Creek Diversion	August 6, 2019	0845–1345	
Birch Creek Diversion	August 6, 2019	1500–1830	
Green Creek Diversion	August 8, 2019	0800–1345	
Bishop Creek South Fork Diversion Dam	August 7, 2019	1200–1430	The southeastern portion of the Survey Area was inaccessible.
Bishop Creek Intake 2 Dam	August 5, 2019	0930–1215; 1315–1515	
Bishop Creek Powerhouse No. 2 and Intake 3	August 9, 2019	0830–1230	The eastern portion of the Survey Area was inaccessible.
Bishop Creek Powerhouse No. 3 and Intake 4	June 11 and 12, 2019	1500–1545; 0825–1400	
Bishop Creek Powerhouse No. 4 and Intake 5	June 11, 2019	1000–1115; 1145–1420	
Bishop Creek Powerhouse No. 5 and Intake 6	June 10 and 11, 2019	1345–1500; 0740–0940	The eastern portion of the Survey Area was inaccessible.
Bishop Creek Powerhouse No. 6	June 10, 2019	0740–1320	Areas of private property were not surveyed.

**RESULTS**

Of the 57 Cal-IPC listed invasive plant species listed in Table 2, 16 species were observed in the Survey Area (Table 4). The location and approximate numbers of the observed Cal-IPC Invasive plant species are listed in Attachment A, Non-Native Plant Compendium. Non-native plant species observed along stream reaches monitored during the 2019 Bishop Creek Riparian Monitoring (Read 2019) are also were included in the non-native plant compendium. Hairy whitetop (*Lepidium appelianum*; formerly *Cardaria pubescens*) was observed by E. Read and the INF botanist in a landscaped area around Plant 4 during a tour in 2018. While not native to California, this species is not listed by Cal-IPC and has not been observed elsewhere in the Project area.

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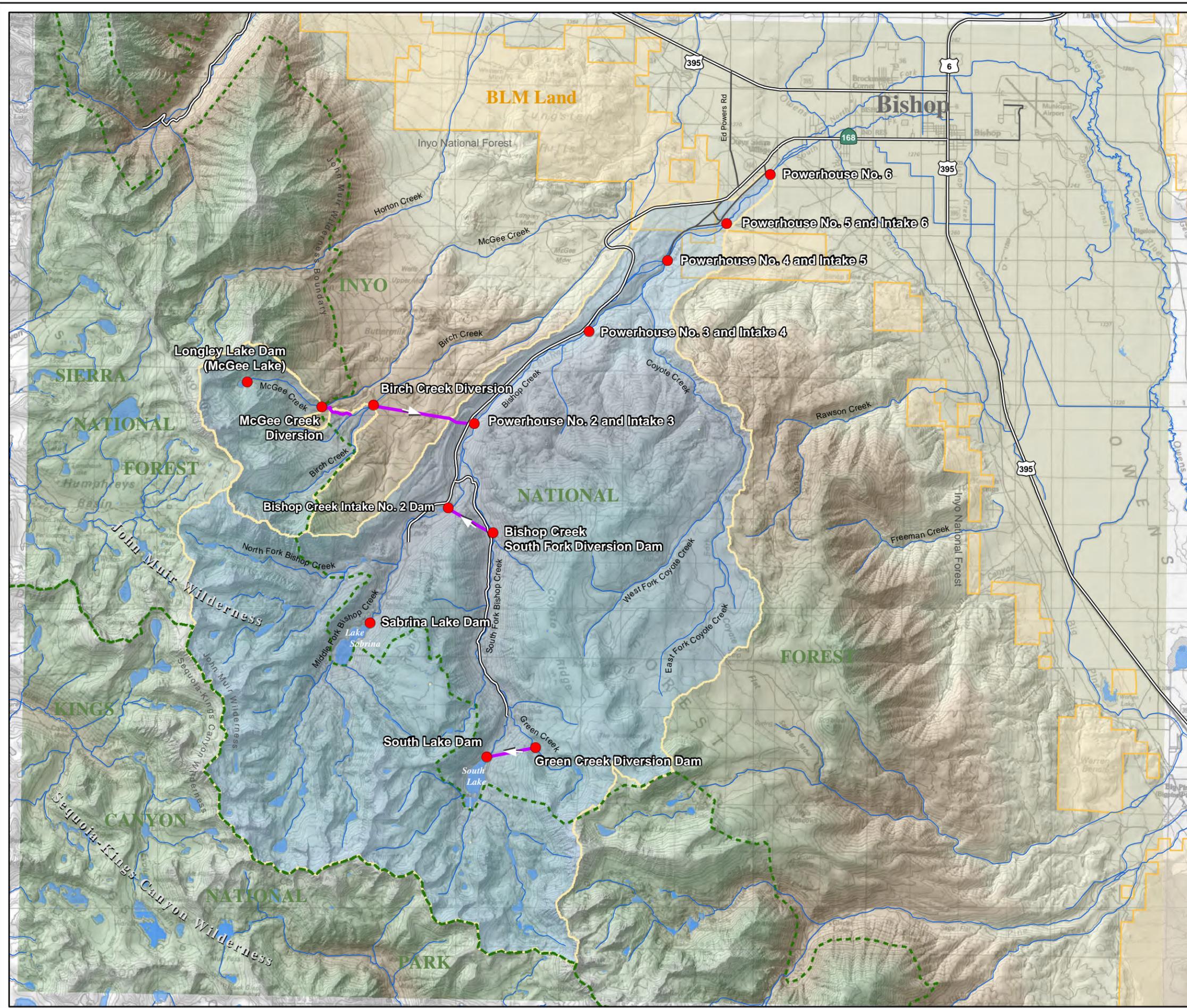
**TABLE 4**  
**CAL-IPC INVASIVE PLANT SPECIES OBSERVED**  
**IN PROJECT STUDY AREA**

Scientific Name	Common Name	Cal-IPC Rating
<i>Bromus diandrus</i>	ripgut grass	Moderate
<i>Bromus rubens</i>	red brome	High
<i>Bromus tectorum*</i>	cheat grass	High
<i>Cirsium vulgar</i>	bull thistle	Moderate
<i>Cynodon dactylon</i>	Bermuda grass	Moderate
<i>Dactylis glomerata</i>	orchard grass	Limited
<i>Descurainia sophia</i>	tansy mustard	Limited
<i>Erodium cicutarium</i>	redstem filaree	Limited
<i>Festuca arundinacea</i>	tall fescue	Moderate
<i>Holcus lanatus</i>	common velvet grass	Moderate
<i>Plantago lanceolata</i>	English plantain	Limited
<i>Robinia pseudoacacia</i>	black locust	Limited
<i>Rubus armeniacus</i>	Himalayan blackberry	High
<i>Rumex crispus</i>	curly dock	Limited
<i>Salsola tragus</i>	Russian thistle	Limited
<i>Verbascum thapsus</i>	woolly mullein	Limited

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**REFERENCES**

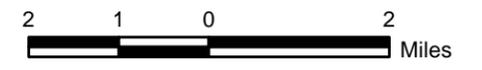
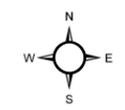
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**Regional Location**

**Legend**

- Project Facility Site Locations
- Diversion Channels, Pipelines, & Penstocks
- Project Contributing Watershed
- National Forest/National Park Boundary
- Wilderness Area Boundary
- Bureau of Land Management (BLM) Boundary



**Project Vicinity**

*Bishop Creek Hydroelectric Relicensing Project*

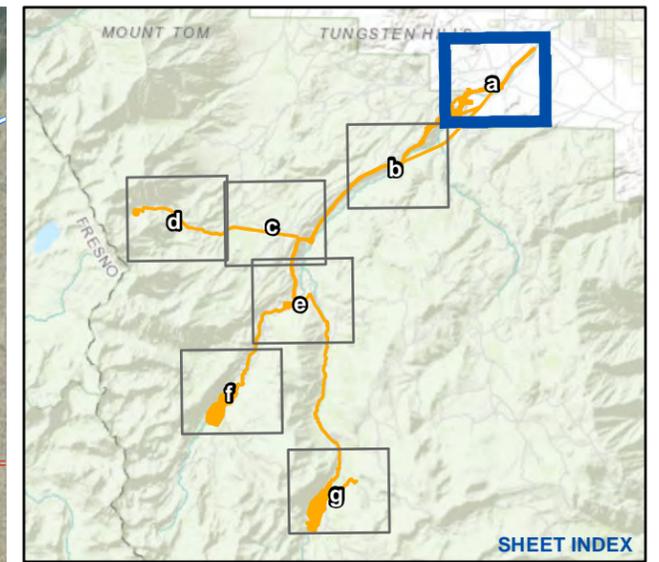
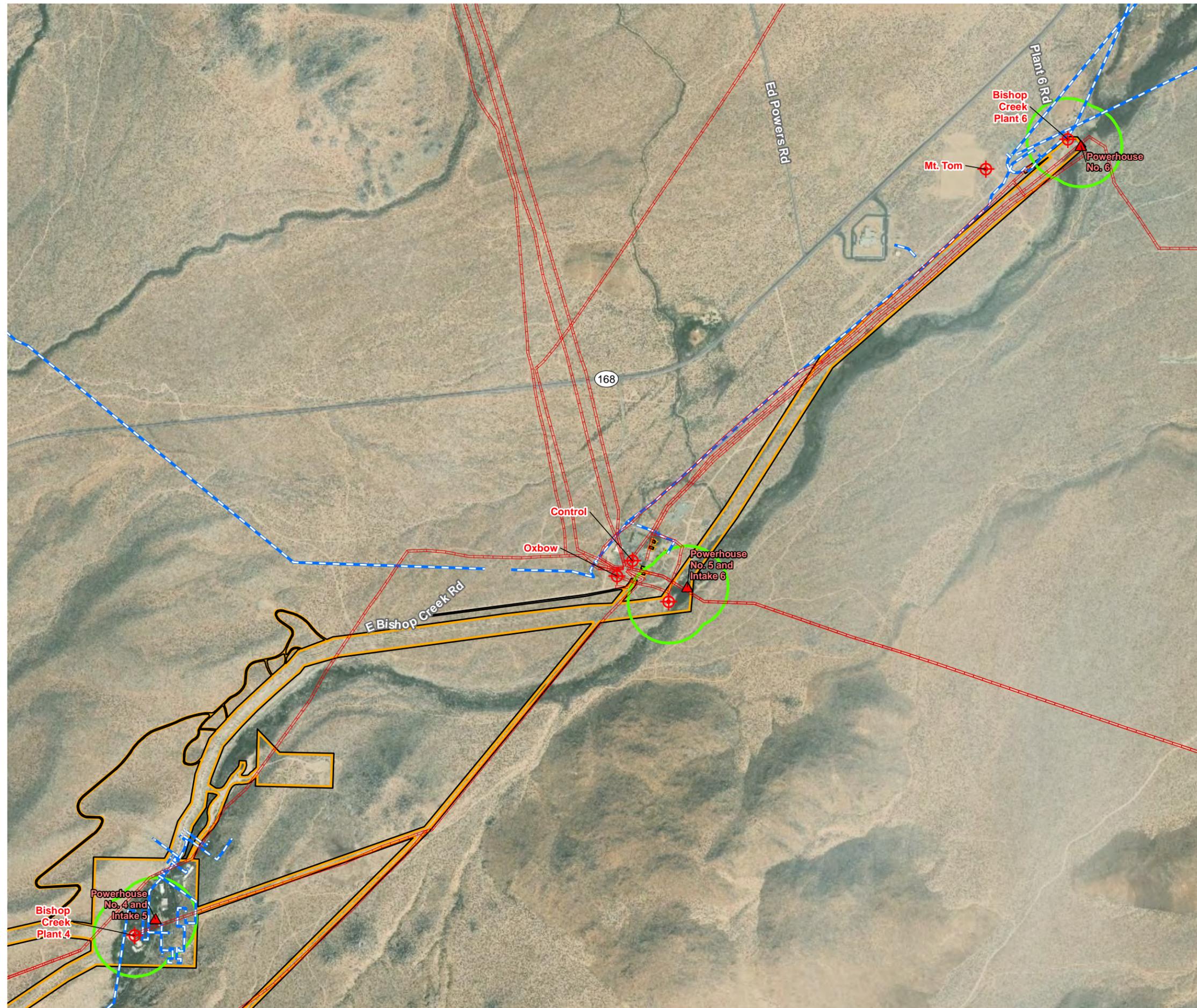
**Exhibit 1**



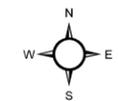
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- Transmission Line
- Powerline
- FERC Boundary
- Invasive Plant Species Survey Area



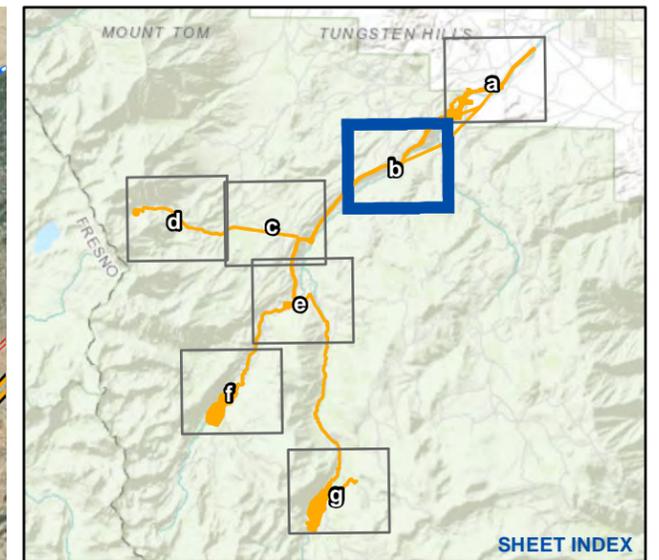
Aerial Source: Esri, DigitalGlobe 2018

**Invasive Plant Species Survey Area** **Exhibit 2a**  
*Bishop Creek Hydroelectric Relicensing Project*

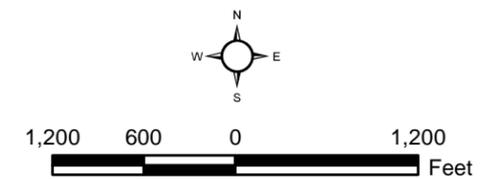


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- Powerhouse
- Utility
- Gage
- Transmission Line
- Powerline
- FERC Boundary
- Invasive Plant Species Survey Area



Aerial Source: Esri, DigitalGlobe 2018

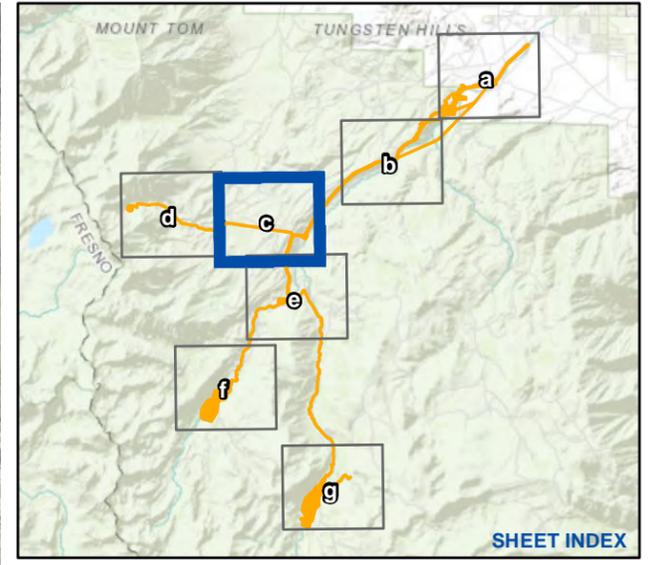
## Invasive Plant Species Survey Area Exhibit 2b

Bishop Creek Hydroelectric Relicensing Project

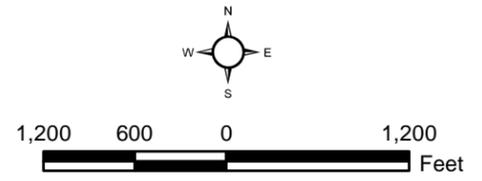


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- Powerhouse
- Utility
- Diversion
- Penstock
- Transmission Line
- Powerline
- FERC Boundary
- Invasive Plant Species Survey Area



Aerial Source: Esri, DigitalGlobe 2018

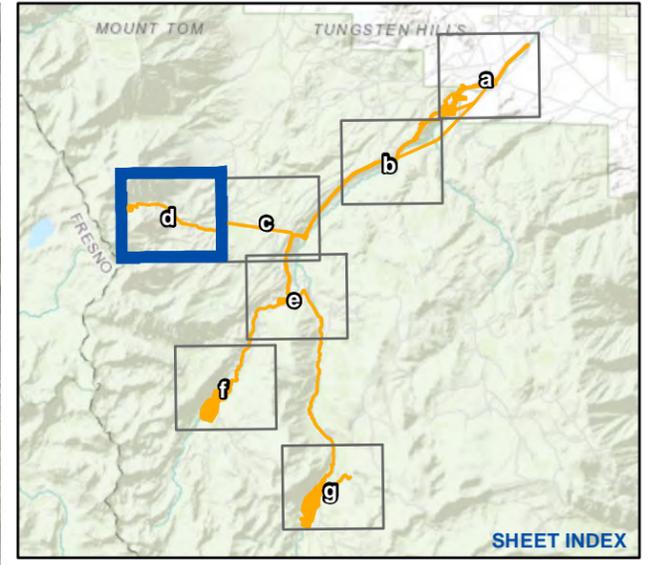
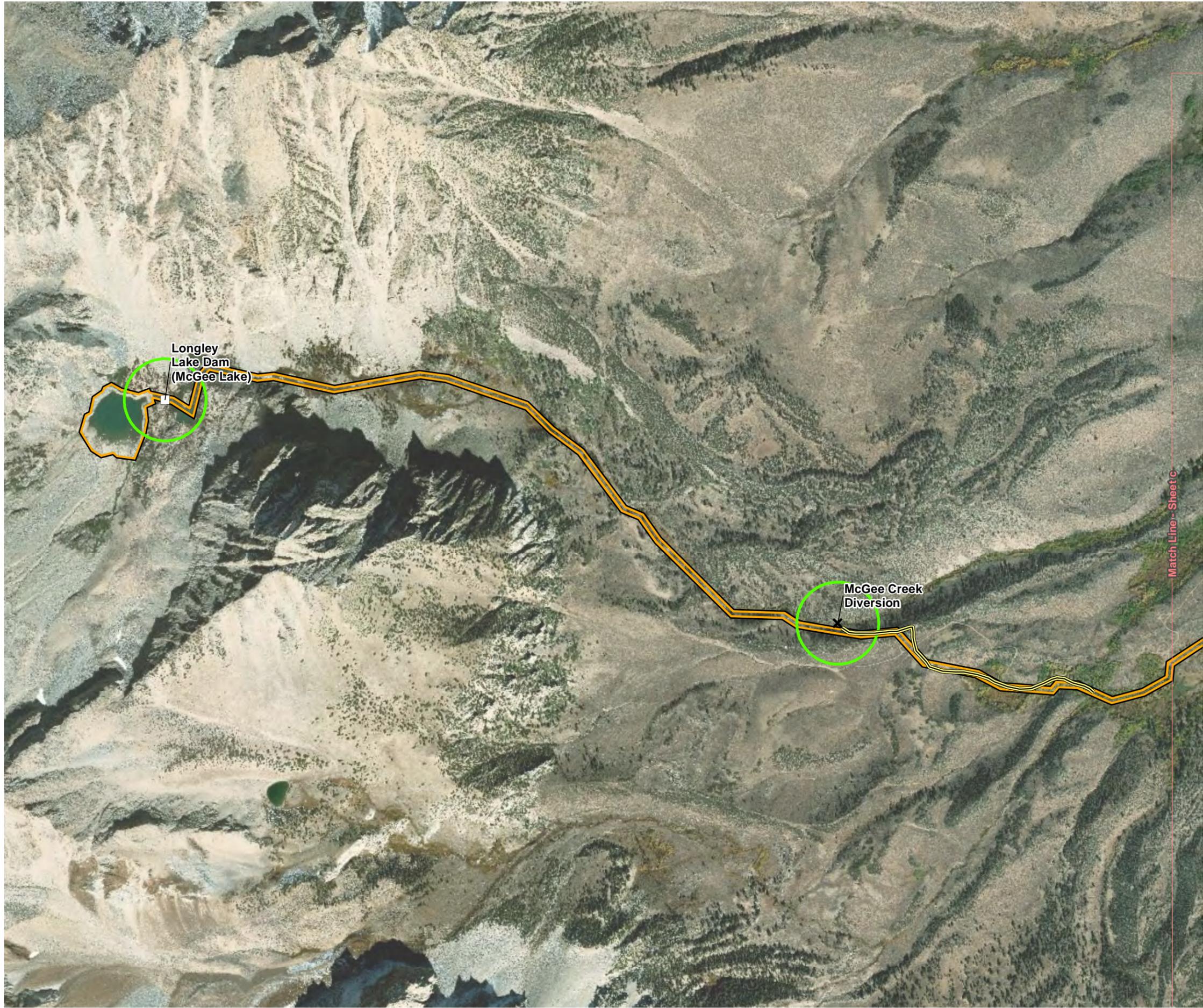
**Invasive Plant Species Survey Area** **Exhibit 2c**

*Bishop Creek Hydroelectric Relicensing Project*

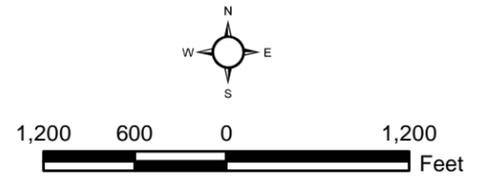


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- ✕ Diversion
- Dam
- ══ Penstock
- ▭ FERC Boundary
- ▭ Invasive Plant Species Survey Area



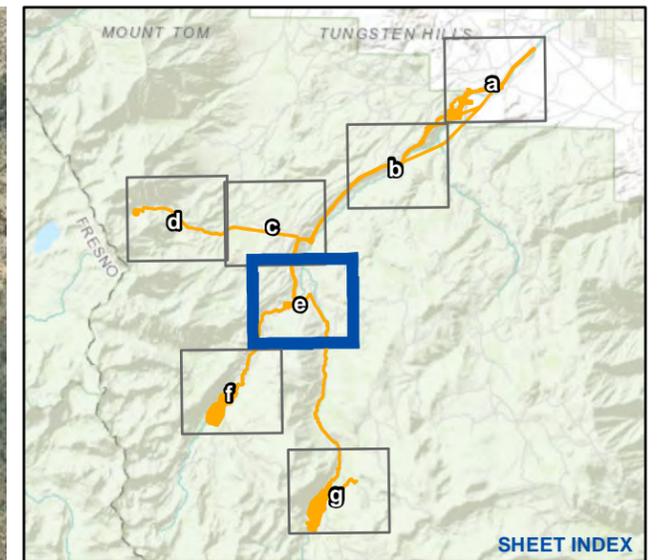
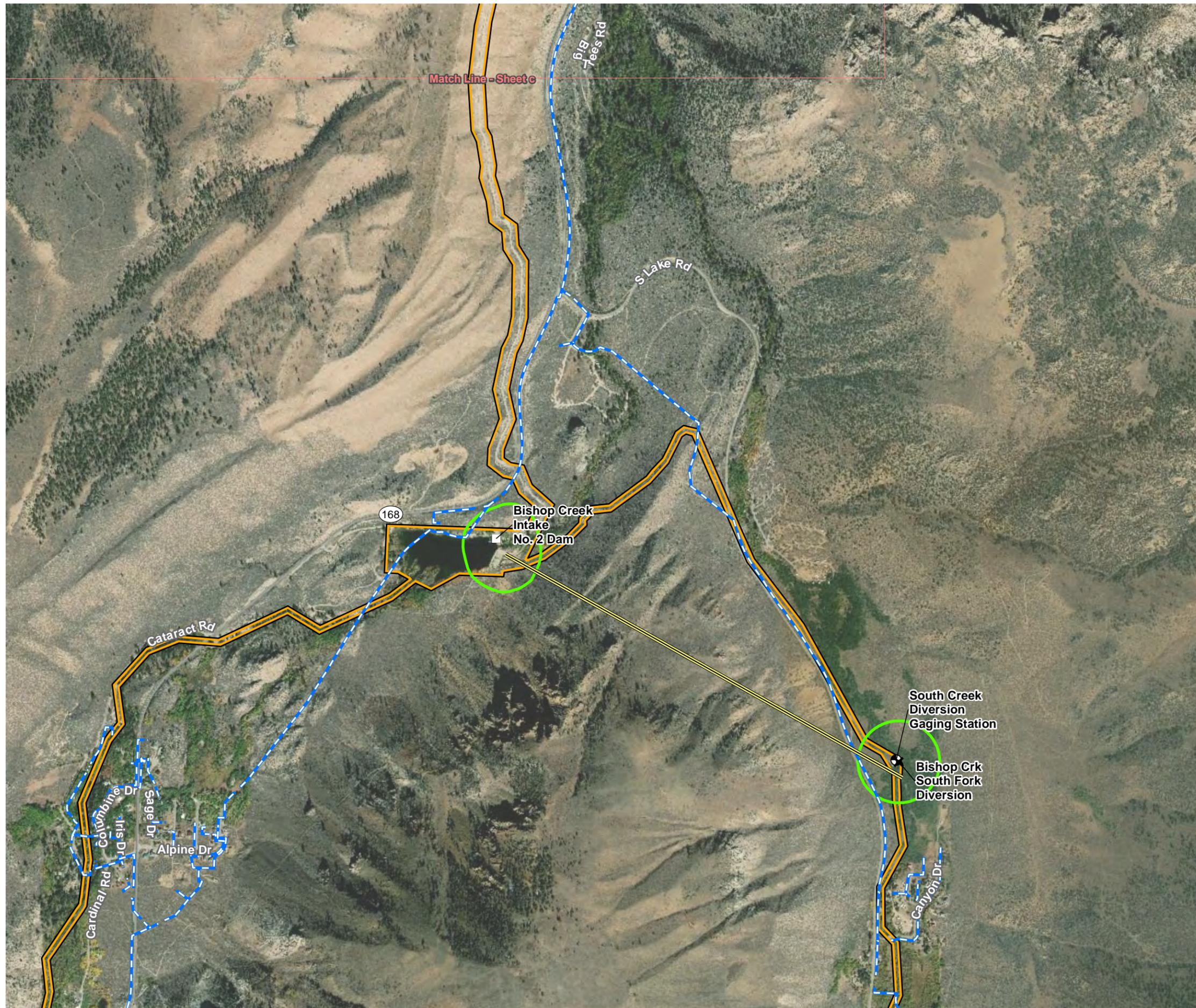
Aerial Source: Esri, DigitalGlobe 2018

**Invasive Plant Species Survey Area** **Exhibit 2d**  
*Bishop Creek Hydroelectric Relicensing Project*

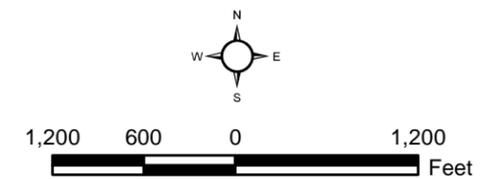


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- ✕ Diversion
- Dam
- ⊙ Gage
- Penstock
- - - Powerline
- ▭ FERC Boundary
- ▭ Invasive Plant Species Survey Area



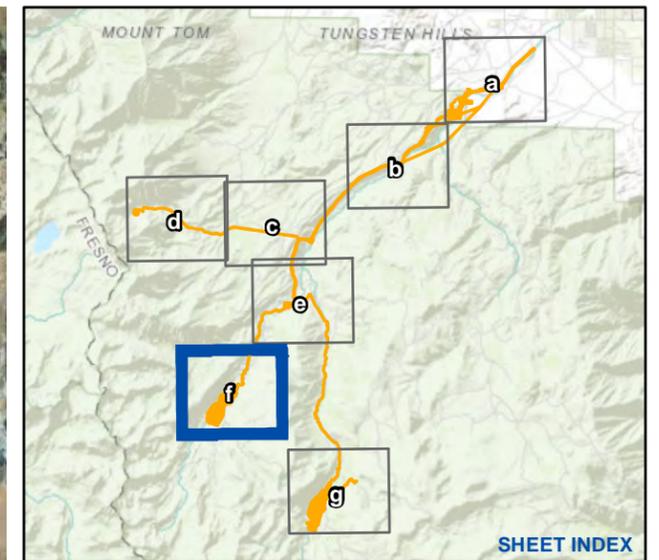
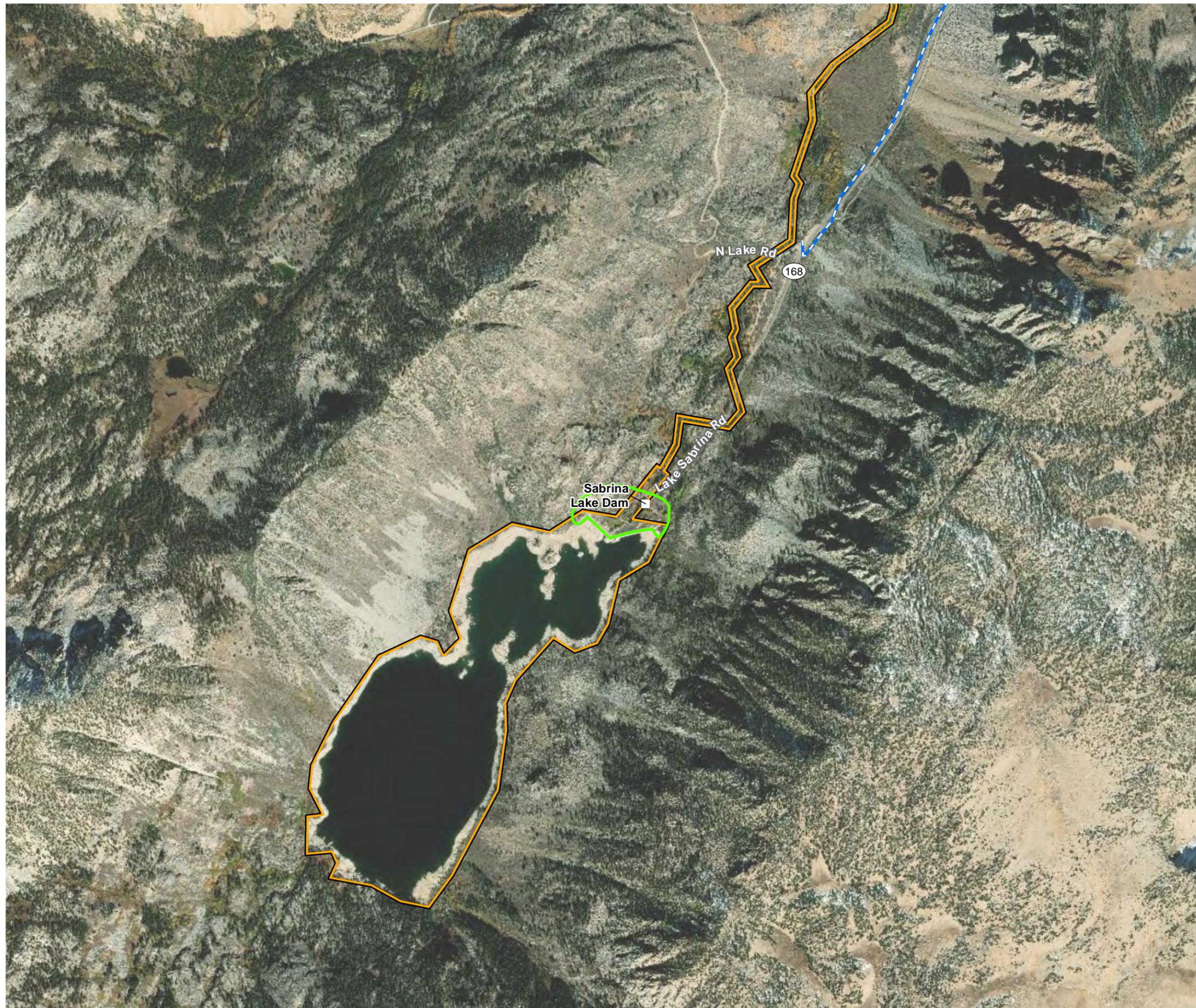
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## Invasive Plant Species Survey Area Exhibit 2e

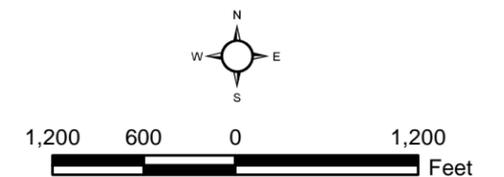
Bishop Creek Hydroelectric Relicensing Project



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-  Dam
-  Powerline
-  FERC Boundary
-  Invasive Plant Species Survey Area



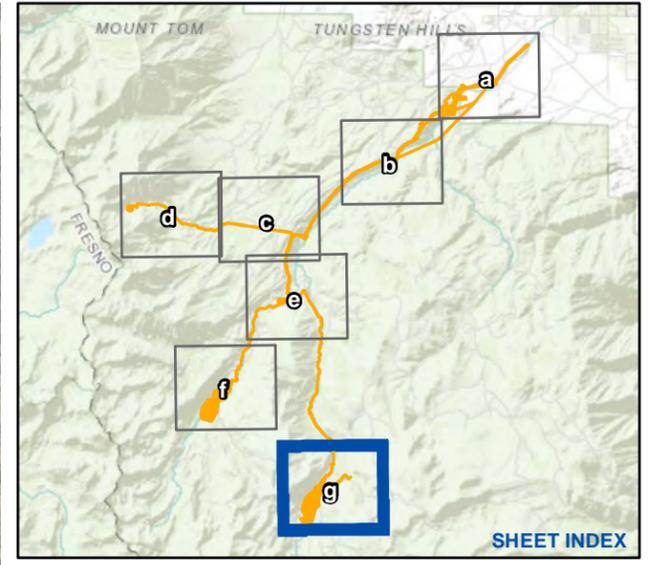
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**Invasive Plant Species Survey Area** **Exhibit 2f**  
*Bishop Creek Hydroelectric Relicensing Project*

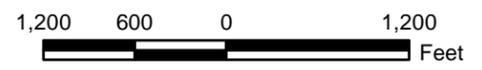
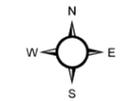


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- ✕ Diversion
- Dam
- Penstock
- ▭ FERC Boundary
- ◻ Invasive Plant Species Survey Area



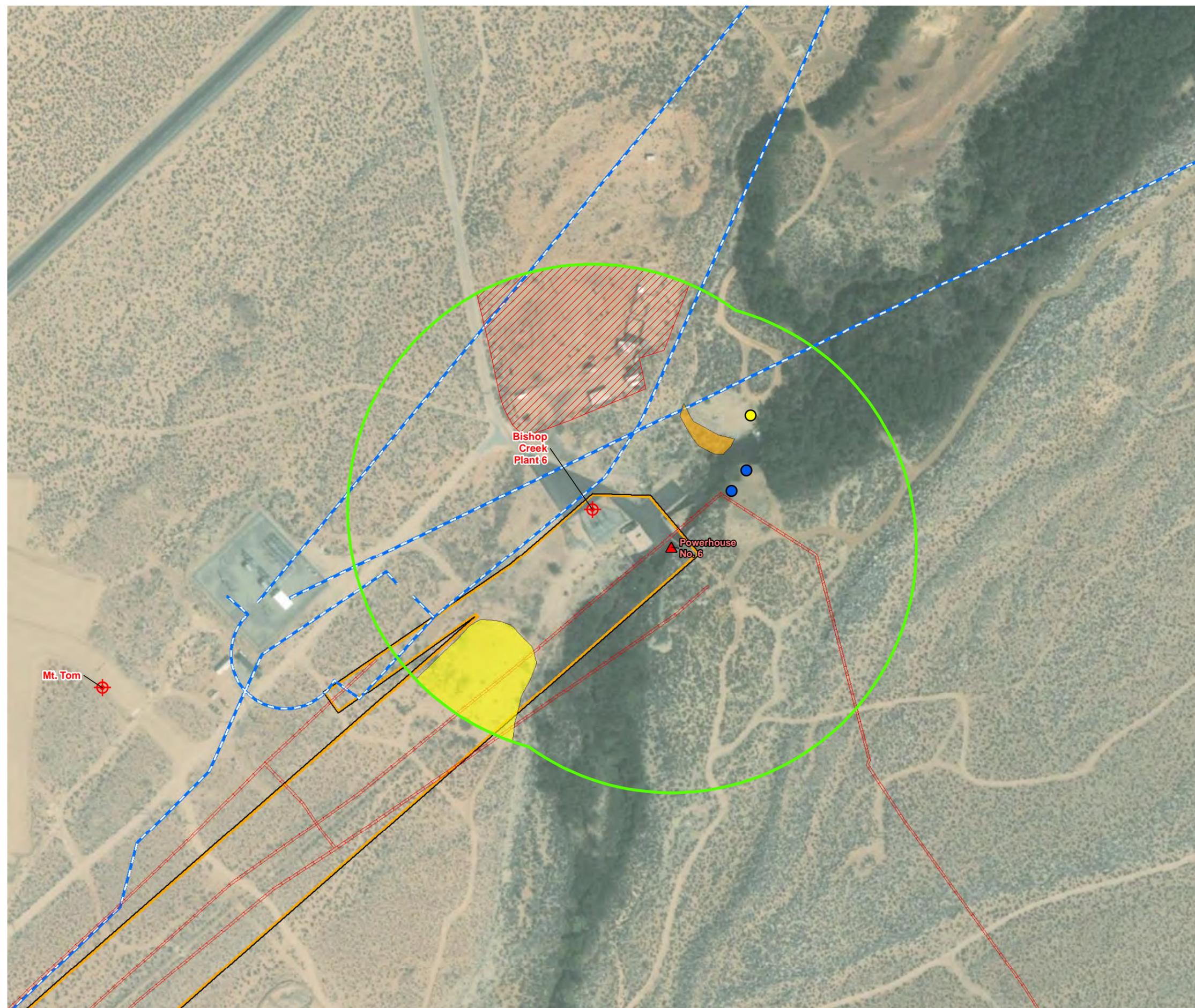
Aerial Source: Esri, DigitalGlobe 2018

**Invasive Plant Species Survey Area** **Exhibit 2g**

*Bishop Creek Hydroelectric Relicensing Project*



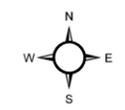
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SHEET INDEX

### Bishop Creek Powerhouse No. 6

- Powerhouse
  - Transmission Line
  - Powerline
  - Invasive Plant Survey
  - FERC Boundary
- Invasive Plant Species**
- curly dock
  - tumble mustard
  - miscellaneous weeds
  - woolly mullein
  - Not Surveyed (Private Property)



Aerial Source: Esri, DigitalGlobe 2015

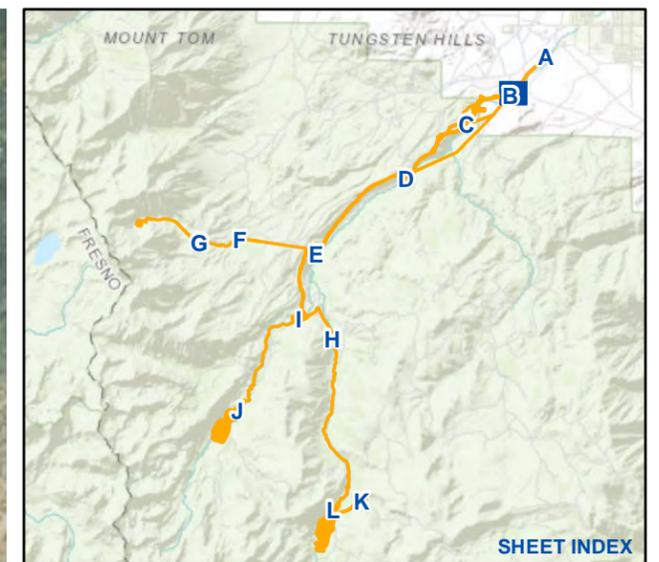
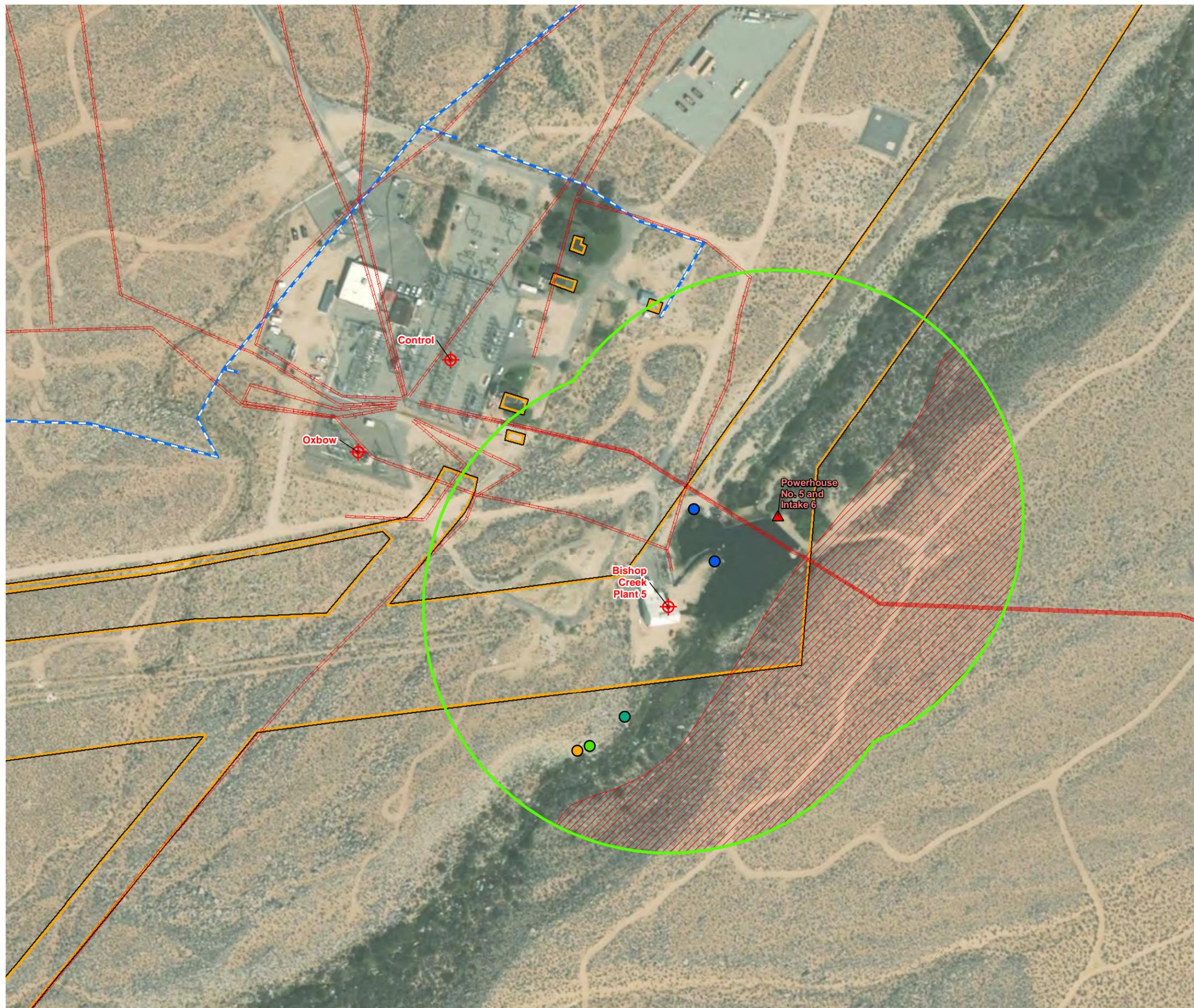
## Invasive Plant Species Observations Exhibit 3A

*Bishop Creek Hydroelectric Relicensing Project*



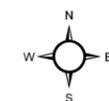
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### Bishop Creek Powerhouse No. 5 and Intake 6

- Powerhouse
  - Transmission Line
  - Powerline
  - Invasive Plant Survey
  - FERC Boundary
- Invasive Plant Species**
- Bermuda grass
  - perennial sweet pea
  - tumble mustard
  - woolly mullein
  - Not Surveyed (Inaccessible)



Aerial Source: Esri, DigitalGlobe 2015

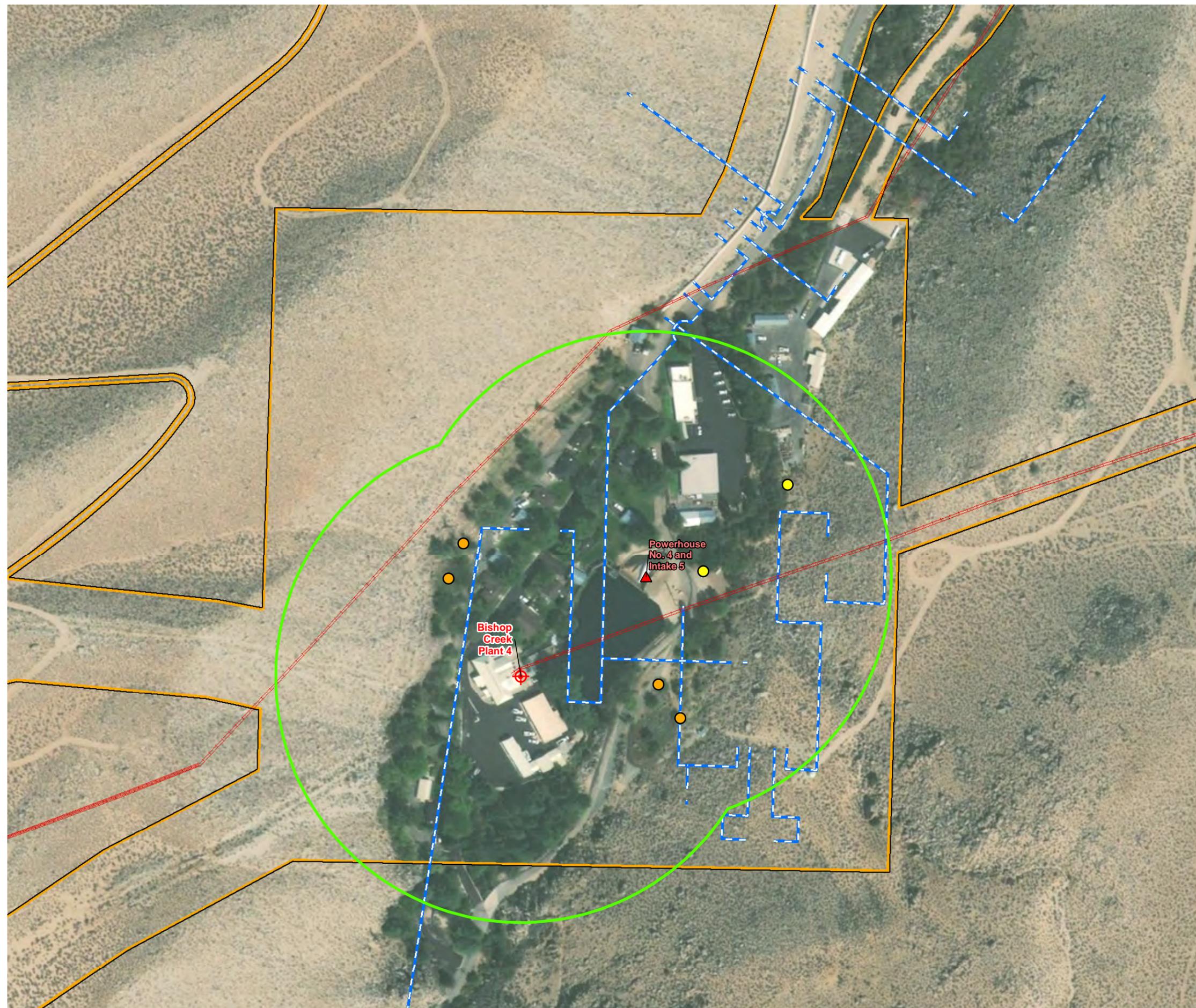
## Invasive Plant Species Observations Exhibit 3B

*Bishop Creek Hydroelectric Relicensing Project*



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**Bishop Creek Powerhouse  
No. 4 and Intake 5**

- Powerhouse
- Transmission Line
- Powerline
- Invasive Plant Survey
- FERC Boundary

**Invasive Plant Species**

- curly dock
- woolly mullein



Aerial Source: Esri, DigitalGlobe 2015

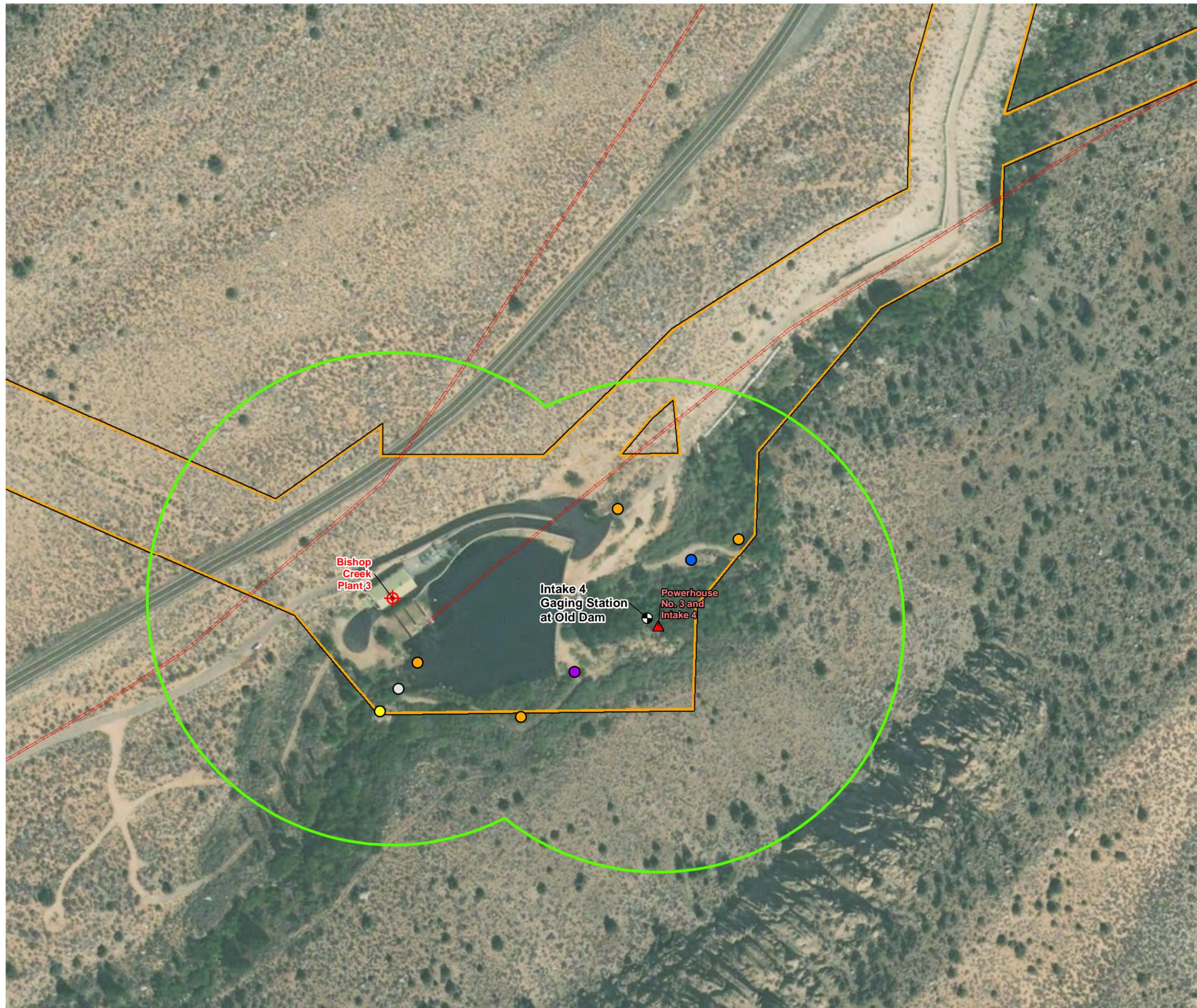
**Invasive Plant  
Species Observations Exhibit 3C**

*Bishop Creek Hydroelectric  
Relicensing Project*



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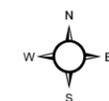


### Bishop Creek Powerhouse No. 3 and Intake 4

- Powerhouse
- Gage
- Transmission Line
- Invasive Plant Survey
- FERC Boundary

#### Invasive Plant Species

- bull thistle
- curly dock
- Russian thistle
- tumble mustard
- woolly mullein



Aerial Source: Esri, DigitalGlobe 2015

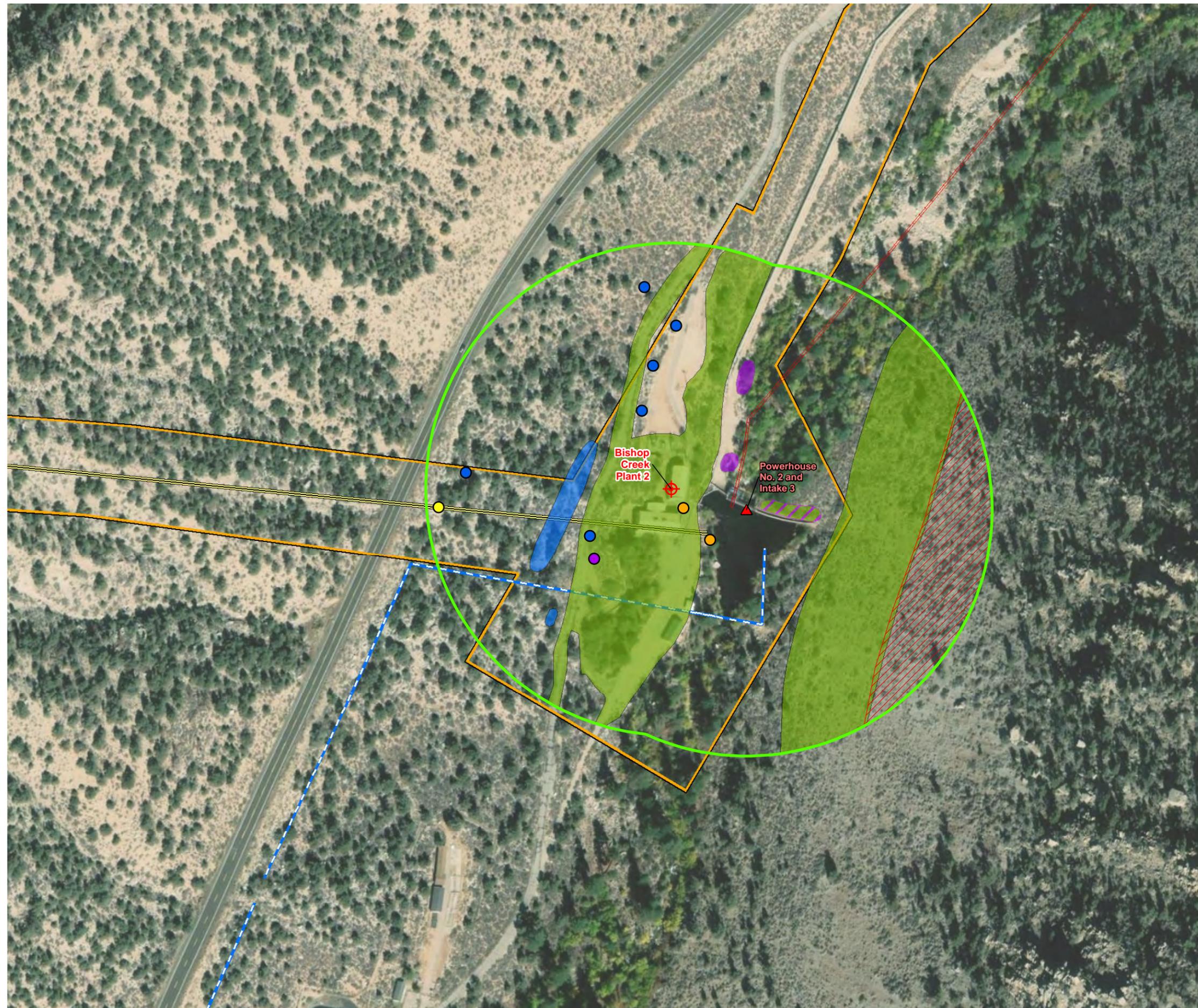
## Invasive Plant Species Observations Exhibit 3D

Bishop Creek Hydroelectric Relicensing Project



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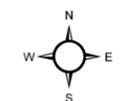


### Bishop Creek Powerhouse No. 2 and Intake 3

- Powerhouse
- Penstock
- Transmission Line
- Powerline
- Invasive Plant Survey Area
- FERC Boundary

### Invasive Plant Species

- curly dock
- Russian thistle
- tumble mustard
- woolly mullein
- cheat grass
- cheat grass and Russian thistle
- tumble mustard
- white sweetclover
- Not Surveyed (Inaccessible)



Aerial Source: Esri, DigitalGlobe 2015

## Invasive Plant Species Observations Exhibit 3E

Bishop Creek Hydroelectric Relicensing Project



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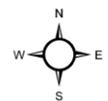


### Birch Creek Diversion

- Penstock
- Diversion
- Invasive Plant Survey
- FERC Boundary

### Invasive Plant Species

- bull thistle
- cheat grass
- English plantain
- cheat grass



Aerial Source: Esri, DigitalGlobe 2015

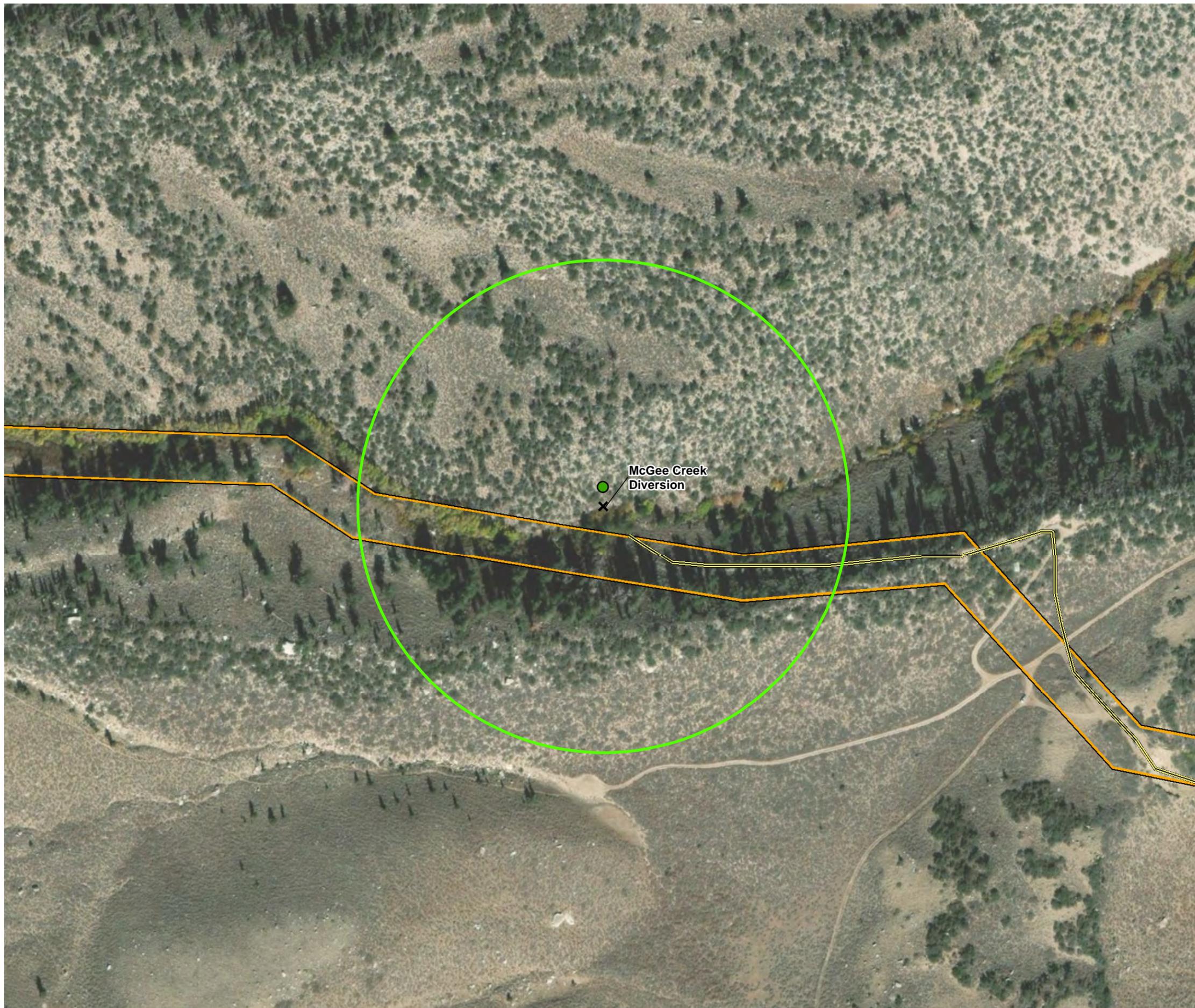
## Invasive Plant Species Observations Exhibit 3F

*Bishop Creek Hydroelectric Relicensing Project*



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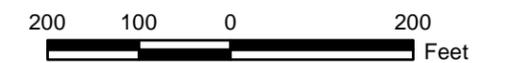
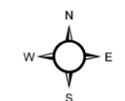


**McGee Creek Diversion**

-  Penstock
-  Diversion
-  Invasive Plant Survey
-  FERC Boundary

**Invasive Plant Species**

-  cheat grass



Aerial Source: Esri, DigitalGlobe 2015

**Invasive Plant Species Observations Exhibit 3G**

*Bishop Creek Hydroelectric Relicensing Project*



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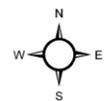


### Bishop Creek South Fork Diversion Dam

- Penstock
- Diversion
- Gage
- Powerline
- Invasive Plant Survey Area
- FERC Boundary

### Invasive Plant Species

- woolly mullein
- cheat grass
- Not Surveyed (Inaccessible)



Aerial Source: Esri, DigitalGlobe 2015

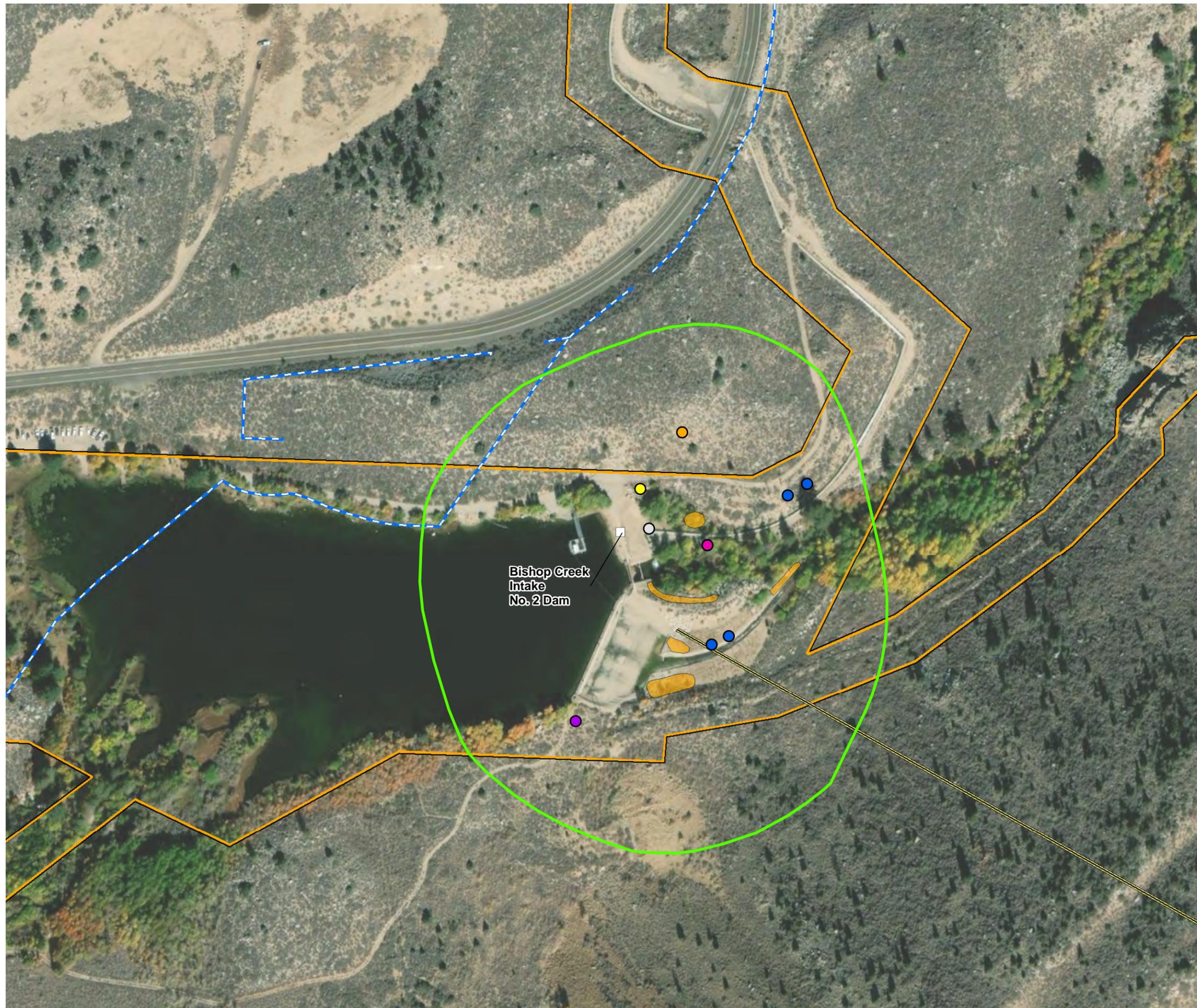
## Invasive Plant Species Observations Exhibit 3H

*Bishop Creek Hydroelectric Relicensing Project*



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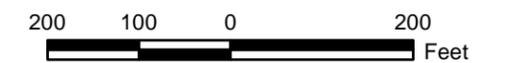


### Bishop Creek Intake No. 2 Dam

- Penstock
- Dam
- Powerline
- Invasive Plant Survey
- FERC Boundary

### Invasive Plant Species

- bull thistle
- curly dock
- Russian thistle
- tall fescue
- tumble mustard
- woolly mullein
- woolly mullein



Aerial Source: Esri, DigitalGlobe 2015

## Invasive Plant Species Observations Exhibit 31

Bishop Creek Hydroelectric Relicensing Project



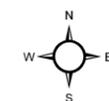
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**Sabrina Lake Dam**

- Dam
  - Invasive Plant Survey Area
  - FERC Boundary
- Invasive Plant Species**
- cheat grass
  - cheat grass and woolly mullein
  - woolly mullein
  - Not Surveyed (Inaccessible)



Aerial Source: Esri, DigitalGlobe 2015

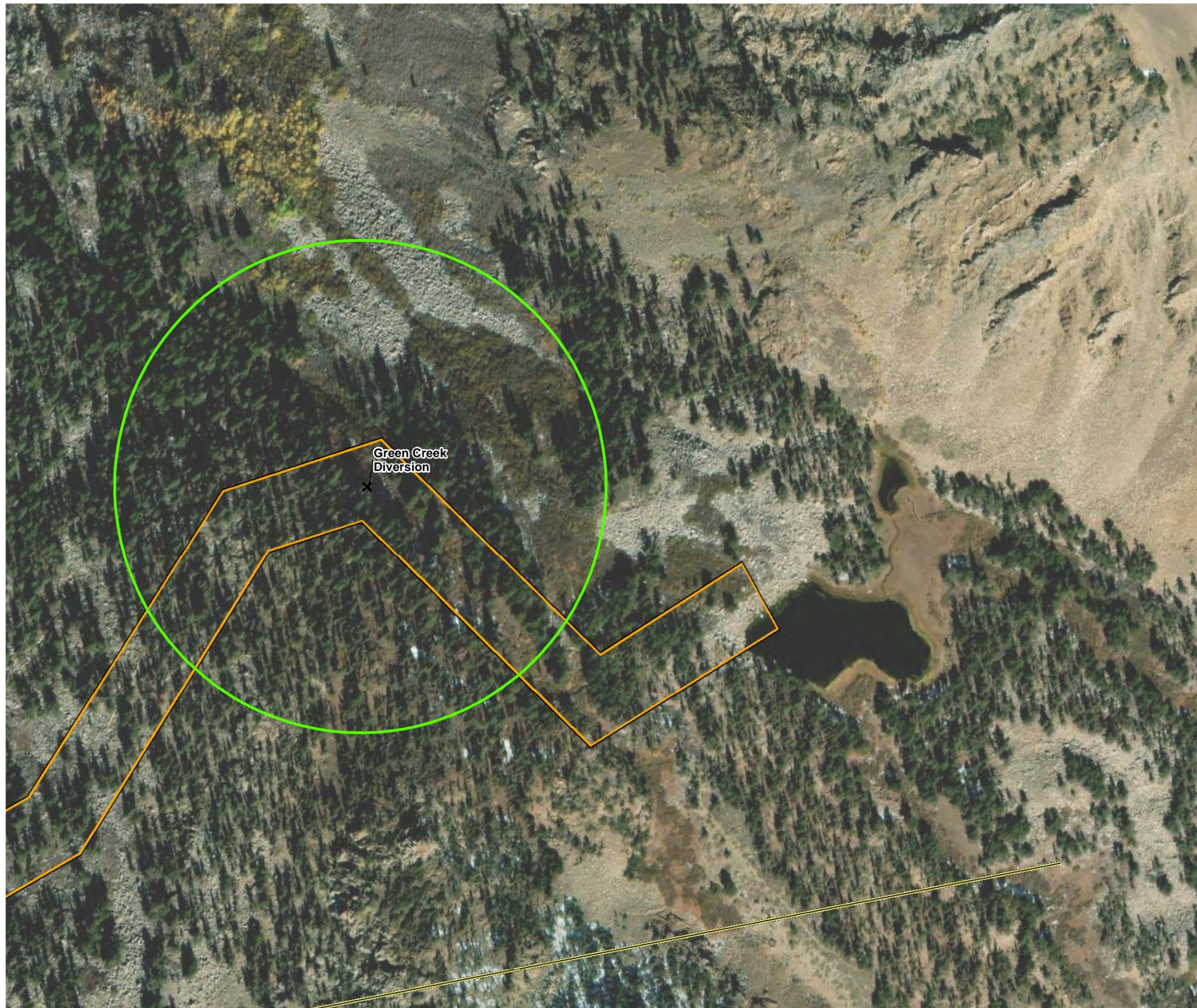
**Invasive Plant Species Observations Exhibit 3J**

*Bishop Creek Hydroelectric Relicensing Project*



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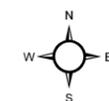
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**Green Creek Diversion**

-  Penstock
-  Diversion
-  Invasive Plant Survey Area
-  FERC Boundary

**Invasive Plant Species**



Aerial Source: Esri, DigitalGlobe 2015

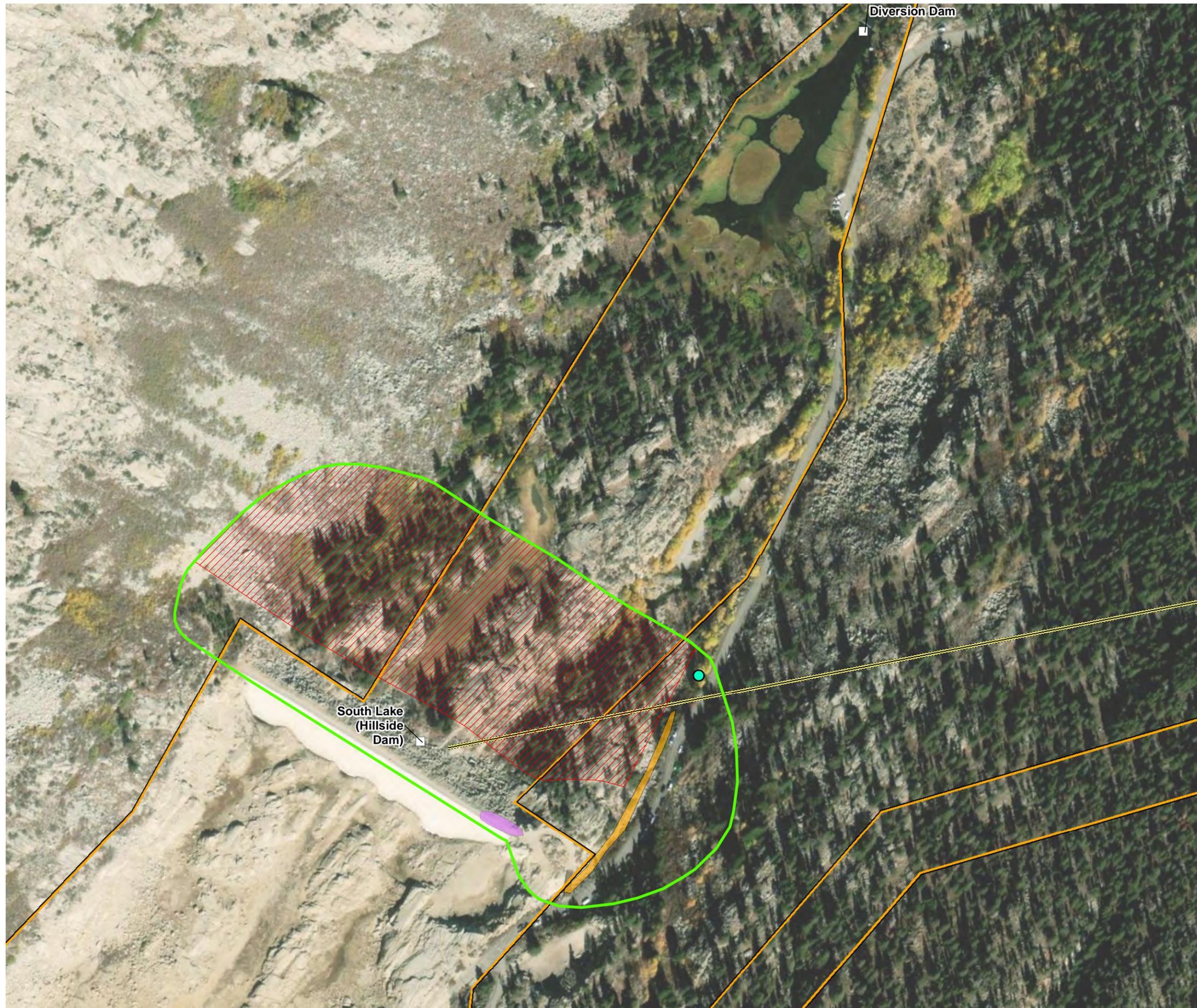
**Invasive Plant Species Observations Exhibit 3K**

*Bishop Creek Hydroelectric Relicensing Project*



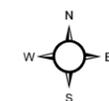
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### South Lake (Hillside) Dam

- Penstock
  - Dam
  - Invasive Plant Survey
  - FERC Boundary
- Invasive Plant Species**
- white sweetclover
  - wise tansy mustard
  - woolly mullein
  - Not Surveyed (Inaccessible)



Aerial Source: Esri, DigitalGlobe 2015

## Invasive Plant Species Observations Exhibit 3L

Bishop Creek Hydroelectric Relicensing Project



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**ATTACHMENT A**  
**PLANT COMMUNITY DESCRIPTIONS**

## PLANT COMMUNITIES

### Upland Botanical Resources

This section is based on keys and descriptions from the USFS using the Calveg<sup>1</sup> classification system. This is the preferred key in use by the Inyo National Forest and is used here to be consistent with the Inyo National Forest Plan (USFS 2018a). In this system, differences between community types (also referred to as alliances) are based on canopy cover as determined from aerial photography and satellite imagery.

### Tree Dominated

#### *Canyon Live Oak*

With a canopy cover of at least 50 percent, the canyon live oak (*Quercus chrysolepis*) community generally occurs on relatively dry, shallow colluvial soils in steep canyons between approximately 1600 feet and 8400 feet. Understory shrubs can include deerbrush (*Ceanothus integerrimus*) and whiteleaf Manzanita (*Arctostaphylos viscida*), as well as annual grasses and forbs.

#### *Eastside Pine*

This community is defined by presence of Jeffrey pine (*Pinus jeffreyi*), either alone or in combination with ponderosa pine (*P. ponderosa*), with a canopy cover of at least 75 percent. The community generally occurs at moderate to upper montane elevations, especially in an elevation range of approximately 5400 feet to 10,000 feet.

#### *Limber Pine*

With a canopy cover of at least 75 percent, the limber pine (*Pinus flexilis*) community is associated with dry, steep, high elevation sites generally in the range of 8000 feet to 10,600 feet. These slopes are often east facing, eroded, rocky, coarse-textured, and with low soil nutrient levels.

#### *Lodgepole Pine*

The lodgepole pine (*Pinus contorta* ssp. *murrayana*) alliance, with at least 75 percent canopy cover of this species, generally occurs at elevations from approximately 5800 feet to 11,200 feet. Lodgepole pine is an important invader species following fire or disturbance.

#### *Singleleaf Pinyon Pine*

With a canopy cover of at least 75 percent, the singleleaf pinyon pine (*Pinus monophylla*) community typically occupies dry slopes within a wide elevation range. Understory shrub species commonly include big sagebrush (*Artemisia tridentata*), bitterbrush (*Purshia tridentata*), cacti (*Opuntia* spp.) and rabbitbrush (*Chrysothamnus* spp.).

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<sup>1</sup> The CALVEG ("Classification and Assessment with Landsat of Visible Ecological Groupings") system was initiated in January 1978 by the Region 5 Ecology Group of the U.S. The Calveg team's mission was to classify California existing vegetation communities for use in statewide resource planning considerations. It is a hierarchical classification originally based on "formation" categories: forest, woodland, chaparral, shrubs and herbaceous in addition to non-vegetated units. They were originally identified by distinctions calculated among canopy reflectance values used in the LANDSAT satellite. Since then, the classification has been expanded from an initial 129 types occurring throughout the eight regions of the state to the current 213 occurring in nine regions, and image resolution has been enhanced. <https://www.fs.fed.us/r5/rsl/Projects/classification/system.shtml> accessed January 16, 2019.

### ***Subalpine Conifers***

A combination of two or more conifer species, with a canopy cover of at least 50 percent, comprises this community. Depending on location, the mixture may include three or more of the following species: mountain hemlock (*Tsuga mertensiana*), lodgepole pine (*Pinus contorta* ssp. *murrayana*), limber pine (*P. flexilis*) and/or whitebark pine (*P. albicaulis*). The elevation range of this community is approximately 7600 feet to 11,800 feet.

### ***Whitebark Pine***

With a canopy cover of whitebark pine (*Pinus albicaulis*) of at least 75 percent, this community occurs on high windswept ridges within an elevation range of 8600 feet to 12,000 feet. In these areas, a krummholzed form is common, but an upright form also grows in areas of glacial scouring where soil development is poor.

### **Shrub Dominated**

#### ***Alpine Mixed Scrub***

Alpine Mixed Scrub communities consist of a mixture of tall and dwarf shrubs and some low graminoid and forb species, often including cushion or rosette-leaved plants that survive harsh climatic conditions above timberline. In the Sierra Nevada, the Alpine Mixed Scrub Alliance has been mapped chiefly in the range of approximately 8000 feet to 12,600 feet. Common shrubs include creambush oceanspray (*Holodiscus discolor*), Greene's goldenweed (*Ericameria greenei*) and mountain white heather (*Cassiope mertensiana*). Shrubby willows (*Salix* spp.) are also common in this type. Non-shrub species include those represented in the Alpine Grasses and Forbs Alliance.

#### ***Bitterbrush***

Bitterbrush (*Purshia tridentata*) is dominant in this alliance and can include the varieties antelope bitterbrush (*P. t.* var. *tridentata*) and desert bitterbrush (*P. t.* var. *glandulosa*). The alliance has been mapped at elevations from approximately 4800 feet to 8000 feet. Bitterbrush is a high value forage species that is associated with species such as big sagebrush (*Artemisia tridentata*), singleleaf pinyon pine (*Pinus monophylla*) and Jeffrey pine (*P. jeffreyi*).

#### ***Blackbush***

This community is defined by occurrence of blackbush (*Coleogyne ramosissima*) with a canopy cover of at least 50 percent. Other upland shrubs, especially Mormon tea (*Ephedra* spp.), white bursage (*Ambrosia dumosa*) and saltbush (*Atriplex* spp.) may be present.

#### ***Curleaf Mountain Mahogany***

This community occurs on gently to steeply sloping mountain uplands and ridge tops, usually in association with rocky outcrops. Curleaf mountain mahogany (*Cercocarpus ledifolius*) has been mapped more frequently in its shrub form than as a tree in the southern Sierras. It is abundant mainly at elevations above approximately 5400 feet.

#### ***Great Basin Mixed Scrub/Big (Basin) Sagebrush***

A mixture of common Great Basin shrubs, with big basin sagebrush (*Artemisia tridentata* ssp. *tridentata*) cover of at least 50 percent, defines this type. It commonly occurs in the range of approximately 5000 feet to 10,600 feet in the southern Sierras. Other species can include mountain sagebrush (*A. t.* ssp. *vaseyana*),

bitterbrush (*Purshia tridentata*), curlleaf mountain mahogany (*Cercocarpus ledifolius*), currant (*Ribes* spp.), snowberry (*Symphoricarpos* spp.) and/or interior rose (*Rosa woodsii*).

### **High Desert Mixed Scrub**

This mixture of shrub species, found up to approximately 7400 feet, is defined by the presence of abundant (but not dominant) ephedra species, especially green ephedra (*Ephedra viridis*), spiny menodora (*Menodora spinescens*) and horsebrush (*Tetradymia* spp.).

### **Rabbitbrush**

This community occurs on dry slopes and flats that are dominated by various species of rabbitbrush (*Chrysothamnus* spp.). In the Sierra Nevada it occurs chiefly within an elevation range of approximately 2600 feet to 9000 feet, often in proximity to the annual grasses and Forbs Alliance.

### **Saltbush**

This alliance is a combination of shadscale (*Atriplex confertifolia*), fourwing saltbush (*A. canescens*), and/or other *Atriplex* species. It generally occurs at elevations of approximately 3000 feet to 5000 feet. Other alkaline desert shrub species such as rabbitbrush (*Chrysothamnus* spp.) can be closely associated with this type.

### **Herbaceous Dominated**

#### **Alpine Grasses and Forbs**

Prostrate or low-growing herbaceous species predominate in this botanically diverse community rather than shrubs or trees. The community occurs most often within an elevation range of approximately 8200 feet to more than 13,000 feet. Due to high evaporative potential, the short growing season and abrasion or desiccation by wind, morphological adaptations by particular species are often similar to those in the desert. For example, several cushion-forming plants occur within these rocky sites, as well as species with basal rosette-type leaves. Nevertheless, there are a rich variety of herbaceous species that may be found in this Alliance, partially due to diverse habitats and moisture. On dry, open fell-fields, phlox (*Phlox condensata*) often dominate a site and on granite and metamorphics, oval-leaved buckwheat (*Eriogonum ovalifolium*) is a prominent species in many areas. Other species that may be identified in this community include prostrate sibbaldia (*Sibbaldia procumbens*), knotweed (*Polygonum davisiae*), buttercup (*Ranunculus eschscholtzii*), rockcress (*Arabis lemmonii*), mountain sorrel (*Oxyria digyna*), pussypaws (*Calyptridium umbellatum*), Indian paintbrush (*Castilleja lemmonii*), and (on moist sites) columbine (*Aquilegia pubescens*).

#### **Annual Grasses and Forbs**

This community is dominated by annual grasses such as bromes (*Bromus* spp.), needlegrass (*Achnatherum* spp.) and wild oats (*Avena* spp.), as well as forbs such as owl's clover (*Orthocarpus* spp.), fiddleneck (*Amsinckia intermedia*) and stork's bill (*Erodium* spp.). This community is often associated with burn areas, xeric or disturbed conditions.

#### **Perennial Grasses and Forbs**

This community consists of at least 50 percent cover of perennial grasses and forbs, retaining some moisture in mid-summer and growing in an elevation generally within approximately 6400 feet to 12,000 feet. Upper elevations are often associated with subalpine conifers such as whitebark pine (*Pinus albicaulis*) and lodgepole pine (*P. contorta* ssp. *murrayana*).

**ATTACHMENT A**  
**NON-NATIVE PLANT COMPENDIUM**

NON-NATIVE PLANT SPECIES OBSERVED IN THE SURVEY AREA

Species	Common Name	Cal-IPC Rating	Project Facilities												Number of Sites Present	
			South Lake (Hillside) Dam	Sabrina Lake Dam	McGee Creek Diversion	Birch Creek Diversion	Green Creek Diversion	Bishop Creek South Fork Diversion Dam	Bishop Creek Intake 2 Dam	Bishop Creek Powerhouse No. 2 and Intake 3	Bishop Creek Powerhouse No. 3 and Intake 4	Bishop Creek Powerhouse No. 4 and Intake 5	Bishop Creek Powerhouse No. 5 and Intake 6	Bishop Creek Powerhouse No. 6		
<i>Agrostis gigantea</i>	redtop	-	-	-	-	-	-	-	-	P	-	-	-	-	-	1
<i>Agrostis</i> sp.	bentgrass	<i>Agrostis stolonifera</i> is Limited	-	-	-	P	-	-	-	-	P	-	-	-	-	2
<i>Bromus catharticus</i> var. <i>catharticus</i>	rescue grass	-	-	-	-	-	-	-	-	-	-	-	-	P	-	1
<i>Bromus diandrus</i>	ripgut grass	Moderate	-	-	-	-	-	-	-	-	-	-	P	P	P	3
<i>Bromus rubens</i>	red brome	High	-	-	-	-	-	-	-	-	-	-	-	P	P	2
<i>Bromus</i> sp.	brome	varies by species	-	-	P	-	-	-	-	-	-	-	-	-	-	1
<i>Bromus tectorum</i>	cheat grass	High	-	100	20	50	-	100	P*	10,000	P*	P*	P*	P*	P*	10
<i>Catalpa speciosa</i>	showy southern catalpa	-	-	-	-	-	-	-	-	-	-	-	P	-	-	1
<i>Chenopodium album</i>	lamb's quarters	-	-	-	-	-	-	-	-	-	P	P	P	-	P	4
<i>Cirsium vulgare</i>	bull thistle	Moderate	-	-	-	3	-	-	3	-	9	-	-	-	-	3
<i>Cotoneaster</i> sp.	cotoneaster	various species are Moderate	-	-	-	-	-	-	-	-	-	P	-	-	-	1
<i>Cupressus</i> sp.	cypress	-	-	-	-	-	-	-	-	-	P	-	-	-	-	1
<i>Cynodon dactylon</i>	Bermuda grass	Moderate	-	-	-	-	-	-	-	-	-	-	-	1 clump	-	1
<i>Dactylis glomerata</i>	orchard grass	Limited	-	-	-	-	-	P	-	-	-	-	-	-	-	1
<i>Descurainia sophia</i>	wise tansy mustard	Limited	60	P*	-	-	-	-	P*	-	P*	P*	P*	P*	P*	7
<i>Dysphania botrys</i>	Jerusalem oak	-	-	-	-	-	-	-	-	-	-	-	P	P	-	2
<i>Elymus ponticus</i>	tall wheat grass	-	-	-	-	P	-	-	P	-	-	-	-	-	-	2
<i>Erodium cicutarium</i>	redstem filaree	Limited	-	-	-	-	-	-	-	-	-	P	-	P	P	3
<i>Festuca arundinacea</i>	tall fescue	Moderate	-	-	-	-	-	-	4	-	-	-	-	-	-	1
<i>Festuca pratensis</i>	meadow fescue	-	-	-	-	-	-	-	P	-	-	-	-	-	-	1
<i>Hesperocyparis glabra</i>	smooth western cypress	-	-	-	-	-	-	-	-	P	-	-	-	-	-	1
<i>Holcus lanatus</i>	common velvet grass	Moderate	-	-	-	-	-	-	-	-	-	-	-	-	P	1
<i>Hordeum murinum</i>	wall barley	Moderate	-	-	-	-	-	-	-	-	-	-	-	P	P	2
<i>Iris germanica</i>	German iris	-	-	-	-	-	-	-	-	-	-	-	P	-	-	1
<i>Lactuca serriola</i>	prickly lettuce	-	-	-	-	-	-	-	-	-	P	P	P	P	P	4
<i>Lathyrus latifolius</i>	perennial sweet pea	-	-	-	-	-	-	-	-	-	-	-	P	1 clump	-	2
<i>Malus pumila</i>	apple	-	-	-	-	-	-	-	-	P	P	P	-	-	-	3
<i>Malva parviflora</i>	cheeseweed	-	-	-	-	-	-	P	-	-	-	-	-	-	-	1
<i>Matricaria discoidea</i>	pineapple weed	-	-	-	-	P	-	-	-	-	-	-	-	-	-	1
<i>Medicago</i> sp.	alfalfa	-	-	-	-	-	-	-	-	-	P	-	-	-	-	1
<i>Melilotus albus</i>	white sweetclover	-	10	-	-	-	-	-	-	25	-	-	P	P	P	4
<i>Melilotus indicus</i>	sourclover	-	-	-	-	-	-	-	-	-	P	-	-	-	-	1
<i>Plantago lanceolata</i>	English plantain	Limited	-	-	-	5	-	P	-	-	-	-	-	-	-	2
<i>Poa annua</i>	annual blue grass	-	-	-	-	-	-	P	-	-	-	-	-	-	-	1
<i>Poa</i> sp.	blue grass	<i>Poa pratensis</i> is Limited	P*	-	-	P*	-	P*	-	P*	P*	P*	P*	P*	P*	8
<i>Populus nigra</i>	black poplar	-	-	-	-	-	-	-	-	-	P	-	-	-	-	1
<i>Portulaca oleracea</i>	purslane	-	-	-	-	-	-	-	-	-	-	P	-	-	-	1
<i>Robinia pseudoacacia</i>	black locust	Limited	-	-	-	-	-	-	-	-	-	P	P	P	P	3
<i>Rubus armeniacus</i>	Himalayan blackberry	High	-	-	-	-	-	-	-	-	-	P	-	-	-	1
<i>Rubus</i> sp.	blackberry	-	-	P	-	-	-	-	-	-	-	-	-	-	-	1
<i>Rumex crispus</i>	curly dock	Limited	-	-	-	-	-	-	5	4	3	10	-	3	5	

NON-NATIVE PLANT SPECIES OBSERVED IN THE SURVEY AREA

Species	Common Name	Cal-IPC Rating	Project Facilities												Number of Sites Present	
			South Lake (Hillside) Dam	Sabrina Lake Dam	McGee Creek Diversion	Birch Creek Diversion	Green Creek Diversion	Bishop Creek South Fork Diversion Dam	Bishop Creek Intake 2 Dam	Bishop Creek Powerhouse No. 2 and Intake 3	Bishop Creek Powerhouse No. 3 and Intake 4	Bishop Creek Powerhouse No. 4 and Intake 5	Bishop Creek Powerhouse No. 5 and Intake 6	Bishop Creek Powerhouse No. 6		
<i>Salsola australis</i>	southern salsola	-	-	-	-	-	-	-	-	-	-	-	P	P	P	3
<i>Salsola</i> sp.	salsola	Limited, if <i>Salsola tragus</i>	-	-	-	-	-	-	-	-	-	-	P	P	P	3
<i>Salsola tragus</i>	Russian thistle	Limited	-	-	-	-	-	-	7	50	10	-	-	-	3	
<i>Sisymbrium altissimum</i>	tumble mustard	-	-	-	-	-	-	-	25	150	9	-	6	16	5	
<i>Sonchus</i> sp.	sow thistle	-	-	-	-	-	-	-	-	-	-	-	-	P	1	
<i>Taraxacum officinale</i>	common dandelion	-	-	-	P	P	P	-	P	-	-	-	-	-	4	
<i>Tribulus terrestris</i>	puncture vine	Limited	-	-	-	-	-	-	-	-	-	-	P	-	1	
<i>Trifolium dubium</i>	little hop clover	-	-	-	-	-	-	-	-	-	-	-	P	-	1	
<i>Trifolium repens</i>	white clover	-	-	-	-	P	-	-	-	-	-	-	-	-	1	
<i>Trifolium</i> sp.	clover	-	-	-	-	P	-	-	-	-	-	-	-	-	1	
<i>Triticum aestivum</i>	wheat	-	-	-	-	-	-	-	-	-	-	-	P	-	1	
<i>Ulmus pumila</i>	Siberian elm	-	-	-	-	-	-	-	-	P	P	P	P	P	5	
<i>Verbascum thapsus</i>	woolly mullein	Limited	20	50	-	-	-	25	50	-	100	25	5	10	8	
<i>Veronica anagallis-aquatica</i>	water speedwell	-	-	-	-	P	-	-	-	-	P	-	-	-	2	
<i>Vinca major</i>	greater periwinkle	Moderate	-	-	-	-	-	-	-	-	-	-	P	-	1	
<i>Vitis</i> sp.	grape	-	-	-	-	-	-	-	-	-	-	-	P	-	1	
<b>Totals</b>			<b>4</b>	<b>4</b>	<b>3</b>	<b>11</b>	<b>2</b>	<b>6</b>	<b>12</b>	<b>12</b>	<b>17</b>	<b>25</b>	<b>19</b>	<b>19</b>		

\* Ubiquitous across site; did not record population size.