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TERRESTRIAL THREATENED, ENDANGERED, AND SENSITIVE SPECIES AND NOXIOUS WEEDS TECHNICAL REPORT

WEBER HYDROELECTRIC PROJECT RELICENSING
FERC PROJECT NO. 1744

Prepared for

PacifiCorp
Hydro Resources
1407 West North Temple, Room 110
Salt Lake City, Utah 84116

Prepared by

SWCA Environmental Consultants
257 East 200 South, Suite 200
Salt Lake City, Utah 84111
(801) 322-4307
www.swca.com

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INTRODUCTION AND BACKGROUND

PacifiCorp, a subsidiary of Berkshire Hathaway Energy, plans to file a new application for relicense of a major project, the Weber Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC or the Commission) Project No. 1744, on the Weber River in Weber, Morgan, and Davis Counties in Utah. The current license will expire on May 31, 2020. PacifiCorp filed a Notice of Intent to File Application for New License (NOI) and a Pre-Application Document (PAD) to initiate the Federal Energy Regulatory Commission's (FERC) Alternative Licensing Process (ALP) for the Project on May 29, 2015.

Surveys for special-status species and noxious weeds have not been conducted in the Project Area since the late 1980s to 1990 during the previous relicensing effort. During the preparation of the PAD, PacifiCorp evaluated existing information on potential terrestrial habitat and species in the Project Area to inform the analysis of Project impacts to these resources. Based on information from the PAD, PacifiCorp prepared a study plan for terrestrial threatened, endangered, and sensitive species and noxious weeds. The study plan proposes four terrestrial resource surveys to gain further information on potential impacts of the Project on these resources.

1. Special-status plant survey for Ute ladies'-tresses orchid (*Spiranthes diluvialis*)
2. Special-status plant survey for Utah angelica (*Angelica wheeleri*) and Wasatch fitweed (*Corydalis caseana*)
3. Noxious weed survey
4. Special-status wildlife survey for smooth greensnake (*Opheodrys vernalis*)

In August 2015, PacifiCorp requested that SWCA Environmental Consultants (SWCA) conduct these four surveys and prepare a survey report for the Weber Hydroelectric Project. SWCA conducted the requested surveys on August 6, 2015. This document provides the results of the surveys.

PROJECT AREA

The Project Area is on the Weber River in Weber, Morgan, and Davis Counties in Utah (Figure A1; all figures are in Appendix A). The Project Area is defined as the area containing all Project features and also encompasses the FERC Project Boundary. For the purposes of characterization and analysis, the Project Area extends from the furthest edge of the FERC Project Boundary, across the Weber River to the far riverbank, and includes the river. The FERC Project Boundary is defined as all lands and waters within the existing FERC Project Boundary for the Weber Hydroelectric Project. The Project Area is partially located on federal lands managed by the Uinta-Wasatch-Cache National Forest (Intermountain Region 4). The FERC Project Boundary contains approximately 14.5 acres (5.9 hectares [ha]) and the Project Area consists of approximately 65.1 acres (26.3 ha).

SURVEYS

SWCA conducted surveys for special-status species (Ute ladies'-tresses, Utah angelica, and Wasatch fitweed), noxious weeds, and smooth greensnake. Special-status plant and smooth greensnake surveys were conducted in the Project Area, and noxious weeds surveys were conducted in the FERC Project Boundary.

Special-Status Plant Survey

The study plan identifies one federally listed plant species, Ute ladies'-tresses, as having the potential to occur in the Project Area and recommends surveys for this species in the Project Area. The study plan also recommends a survey in the Project Area for two U.S. Forest Service (USFS) R4 sensitive plant species, Utah angelica and Wasatch fitweed, at the request of the Uinta-Wasatch-Cache National Forest (USFS 2013). SWCA qualified biologists conducted these surveys on August 6, 2015.

Noxious Weed Survey

Thirty-one state- and county-listed noxious weed species have the potential to occur in the FERC Project Boundary (Utah Department of Agriculture 2010, 2015). Weed species with potential to occur in the Project Area and FERC Project Boundary are listed in Table 1. SWCA conducted weed surveys in the FERC Project Boundary to document the location and extent of any noxious weed infestations.

Table 1. Utah State-Listed Noxious Weed Species and County Declared Noxious Weed Species with Potential to Occur in the Project Area and the FERC Project Boundary

Common Name	Scientific Name
Class A Noxious Weeds*	
Black henbane	*Hyoseyamus niger*
Diffuse knapweed	*Centaurea diffusa*
Leafy spurge	*Euphorbia esula*
Medusahead	*Taeniatherum caput-medusae*
Oxeye daisy	*Chrysanthemum leucanthemum*
Perennial sorghum	*Sorghum* species, *S. halepense*, *S. almum*
Purple loosestrife	*Lythrum salicaria*
Spotted knapweed	*Centaurea maculosa*
St. Johnswort	*Hypericum perforatum*
Sulfur cinquefoil	*Potentilla recta*
Yellow starthistle	*Centaurea solstitialis*
Yellow toadflax	*Linaria vulgaris*
Class B Noxious Weeds*	
Bermudagrass	*Cynodon dactylon*
Broad-leaved peppergrass	*Lepidium latifolium*
Dalmation toadflax	*Linaria dalmatica*
Dyers woad	*Isatis tinctoria*
Hoarycress	*Cardaria draba*
Musk thistle	*Carduus nutans*
Poison hemlock	*Conium maculatum*
Russian knapweed	*Centaurea repens*
Scotch thistle	*Onopordium acanthium*
Squarrose knapweed	*Centaurea virgata*

Table 1. Utah State-Listed Noxious Weed Species and County Declared Noxious Weed Species with Potential to Occur in the Project Area and the FERC Project Boundary

Common Name	Scientific Name
Class C Noxious Weeds‡	
Field bindweed	*Convolvulus arvensis; C.* species
Canada thistle	*Cirsium arvense*
Houndstongue	*Cynoglossum officianale*
Saltcedar	*Tamarix ramosissima*
Quackgrass	*Agropyron repens*
County-Declared Noxious Weeds	
Buffalobur (Davis County)	*Solanum rostratum*
Yellow nutsedge (Davis County)	*Cyperus esculentus*
Burdock (Morgan County)	*Arctium minus*
Puncturevine (Weber County)	*Tribulus terrestris*

Source: Utah Department of Agriculture (2010, 2015).

* Class A: (Early Detection Rapid Response [EDRR]) Declared noxious weeds not native to the state of Utah that pose a serious threat to the state and should be considered as a very high priority.

† Class B: (Control) Declared noxious weeds not native to the state of Utah that pose a threat to the state and should be considered a high priority for control.

‡ Class C: (Containment) Declared noxious weeds not native to the state of Utah that are widely spread but pose a threat to the agricultural industry and agricultural products with a focus on stopping expansion.

Smooth Greensnake

The study plan identifies one state-sensitive species, the smooth greensnake, with some potential to occur in the Project Area and recommends surveys to identify any occurrence of smooth greensnake in the Project Area. There are no known or documented occurrences of smooth greensnake in the Project Area, and the Project Area does not include smooth greensnake-specific Utah habitats (i.e., mountain riparian assemblage with mixed conifer, conifer-deciduous, and subalpine forests; defined meadows/grasslands and wetlands). However, there is some marginal quality general riparian habitat so a precursory/ reconnaissance-level survey of the species was conducted. SWCA qualified biologists conducted the survey for smooth greensnake on August 6, 2015.

METHODS

Before the surveys were conducted, a shapefile of the Project Area was created in ArcGIS 10. The shapefile was uploaded to handheld Trimble GeoXT global positioning system (GPS) units, which have an estimated accuracy of less than 1.0 meter (3.3 feet) when data are post-processed.

Special-Status Plant Surveys

The Project Area was first evaluated for the presence of any potential special-status plant species habitat. Surveys were completed in the Project Area, with particular focus on any suitable habitats. Potential habitats are areas that satisfy the broad criteria of the species' habitat description and are usually determined by a pre-survey assessment. Suitable habitats are areas that exhibit the specific habitat features necessary for species' persistence, as determined by field inspection and/or surveys, but that may or may not contain the species. SWCA conducted surveys in the Project Area where reasonable and safe access to potential and/or suitable habitat was available, given the proximity and boundaries of the adjacent freeway lanes and railroad tracks.

Ute Ladies'-Tresses

After evaluating the Project Area for the presence of any potential Ute ladies'-tresses habitat, surveys to identify the presence of Ute ladies'-tresses within habitat were conducted by qualified personnel in compliance with U.S. Fish and Wildlife Service (USFWS) protocols (USFWS 2011). SWCA conducted the Ute ladies'-tresses surveys during the flowering period (as verified by the Utah USFWS species lead, Jena Lewinsohn) and focused on suitable habitat consisting of wetland areas and the banks of the Weber River in the Project Area. Surveys were conducted by walking or otherwise closely scrutinizing areas of potential habitat looking for flowering stalks. Two surveyors walked a parallel line approximate 0.9 m (3 feet) apart, as the terrain allowed, with each surveyor scrutinizing the area in front of the other surveyor (looking sideways or diagonally rather than directly downward into the vegetation).

Utah Angelica and Wasatch Fitweed

After evaluating the Project Area for the presence of any potential Utah angelica and Wasatch fitweed habitat, surveys to identify the presence of these species within habitat were conducted in the Project Area, with particular focus on any suitable habitat identified. Utah angelica is found in very wet or boggy areas, typically in riparian communities, springs, and seeps from 1,705 to 2,070 m (5,600 to 6,800 feet) in elevation (Utah Native Plant Society 2015) Wasatch fitweed occurs in or along streams or drainages in mid-montane areas from 2,285 to 2,590 m (7,500 to 8,500 feet) in elevation (Utah Native Plant Society 2015).

Noxious Weeds

Noxious weed surveys were conducted using a GPS-based weed mapping data dictionary to map the size and density of any infestations of Utah state-listed or county-listed noxious weeds in the FERC Project Boundary. Weed surveys focused on disturbance margins within the FERC Project Boundary. Any weed locations identified were mapped as buffered points showing the approximate extent of the infestation.

Smooth Greensnake

Although there is no specific protocol for surveying for this species, qualified biologists looked for the smooth greensnake in areas with suitable habitat while conducting the Ute ladies'-tresses and noxious weed surveys. The smooth greensnake is easily identified by its unmarked, bright, satiny green dorsal surface (Redder et al. 2006).

RESULTS

On August 6, 2015, surveys were conducted for Ute ladies'-tresses, Utah angelica, Wasatch fitweed, noxious weed species, and smooth greensnake for the Weber Hydroelectric Project in areas where access was reasonable and safe.

Special-Status Plant Surveys

Ute Ladies'-Tresses

Small patches of suitable habitat for Ute ladies'-tresses were documented in the Project Area along the northern bank of the Weber River west of the Weber Diversion Dam (Figure 1; Figure A2). This area was dominated by willow species (*Salix* spp.) and reed canarygrass (*Phalaris arundinacea*), with patches of common spikerush (*Eleocharis palustris*). A gravel bar, located directly south of the river bank where suitable Ute ladies'-tresses habitat was documented, was unvegetated near the river's edge and densely vegetated with reed canarygrass in the center (Figure 2). No Ute ladies'-tresses individuals were observed during the survey. Most of the banks of the Weber River consist of steep rip-rap and/or dense vegetation that are not suitable habitats for Ute ladies'-tresses.

The USFWS requested that surveys for this species be repeated during the appropriate survey window in 2016 and 2017. The USFWS announced that the survey window was open on July 29, 2016. SWCA conducted a second survey for Ute ladies' –tresses in areas of suitable habitat on August 10, 2016 during the survey window. No Ute ladies'-tresses individuals were observed during the survey. The 2017 survey will be reported to the USFWS for informational purposes, and the biological assessment (BA) and draft license application will be modified, if necessary, based on this additional future information.

Figure 1. Suitable Ute ladies'-tresses habitat on the Weber River.

Figure 2. Gravel bar on the Weber River.

Utah Angelica and Wasatch Fitweed

No suitable habitats for Utah angelica and Wasatch fitweed were observed in the Project Area, which is generally considered to be too low in elevation to support these species, and no individuals were observed during the survey.

Noxious Weeds

Eight state-listed noxious weed species were documented in and adjacent to the FERC Project Boundary: spotted knapweed, Dalmatian toadflax, musk thistle, dyer's woad, field bindweed, Canada thistle, houndstongue, and saltcedar (Figure A3–A5). One Morgan County noxious weed species, lesser burdock, was also documented in the FERC Project Boundary. Most of the noxious weeds observed were concentrated near the parking lot of the Interstate 84 (I-84) rest stop and along the access road to the recreation site west of the rest stop. Weed occurrences within buffered points mapped were typically patchy with 1%–5% density. Field bindweed was documented at the Weber Powerhouse in the lawn (Figure A3) and south of the FERC Project Boundary (Figure A4). Dalmatian toadflax and Dyer's woad occur in the upland areas of the Project Area, typically adjacent to roads (Figures A3–A5). Houndstongue and lesser burdock were documented in the upland margins of the FERC Project Boundary east of the Weber Diversion Dam (Figure A5). Musk thistle and spotted knapweed were common in upland margins of the Weber River and adjacent to roads (Figures A4 and A5). Canada thistle occurs in the upland margins east of the Weber River Diversion Dam and in the FERC Project Boundary adjacent to the Weber River (Figure A5). A single saltcedar tree was documented along the road to the recreation site (Figure A5).

Smooth Greensnake

No smooth greensnakes were observed during the field surveys.

RECOMMENDATIONS

No suitable habitats for either Utah angelica or Wasatch fitweed were identified in the Project Area and no individuals were observed during the surveys; therefore, the relicensing of the Project will have no impacts to these species.

As noted previously, surveys for Ute ladies'-tresses will be conducted for three consecutive years (2015–2017) at the request of the USFWS. However, survey results and a Project impact analysis must be submitted as part of the BA before the completion of the third survey season in 2017 to meet the FERC relicensing schedule. For this reason, PacifiCorp will use results from the first and second year of survey (2015 and 2016) to assess potential impacts and to inform the BA. Survey for the third year (2017) will be conducted to confirm the presence or absence of Ute ladies'-tresses in the Project Area. Results from the 2017 survey will be reported to the USFWS for informational purposes, and the BA and draft license application will be modified, if necessary, based on this additional future information. Patches of suitable habitat for Ute ladies'-tresses were identified in the Project Area; however, no Ute ladies'-tresses individuals were documented during the 2015 and 2016 surveys. The Project will not impact Ute ladies'-tresses, even if present, as no changes to the Project operations are proposed.

Eight state-listed noxious weed species were documented in and adjacent to the FERC Project Boundary. Weed control considerations within the Project boundary will be addressed as the Weber draft license application is developed.

No smooth greensnakes were observed during the field surveys. The Project will not impact smooth greensnakes.

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Appendix A

Maps

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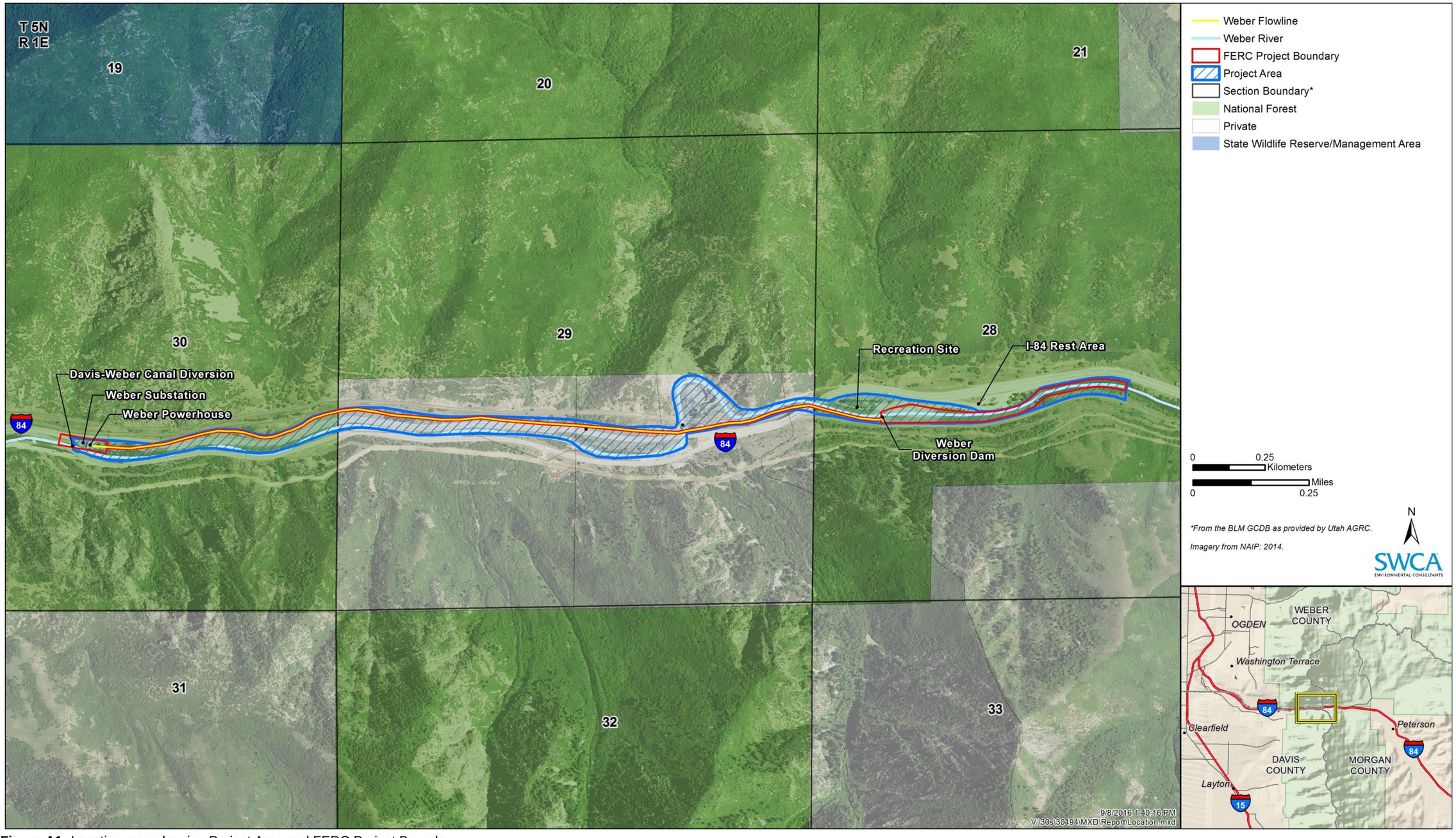

Figure A1. Location map showing Project Area and FERC Project Boundary.

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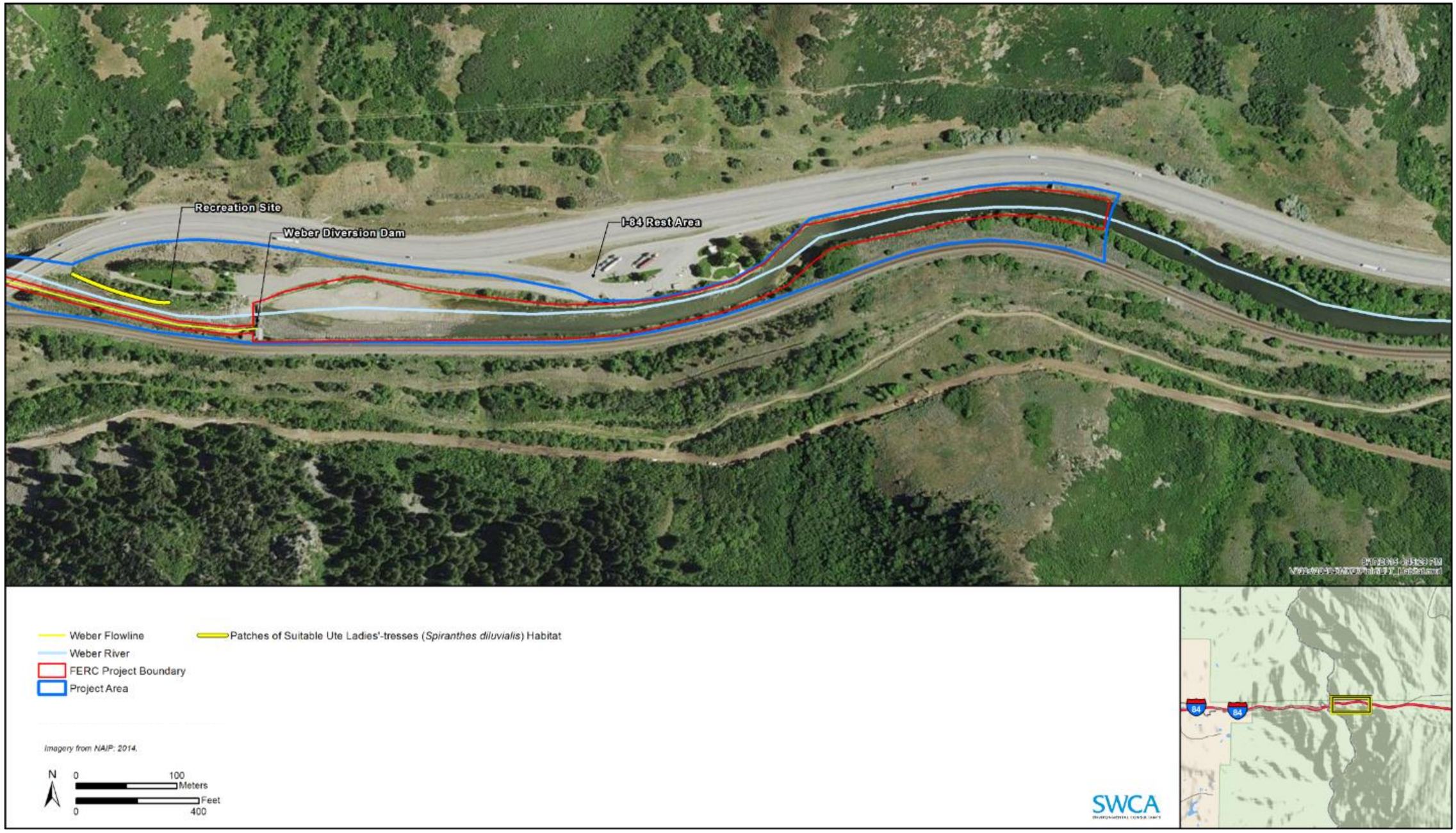

Figure A2. Suitable Ute ladies'-tresses habitat in the Project Area.

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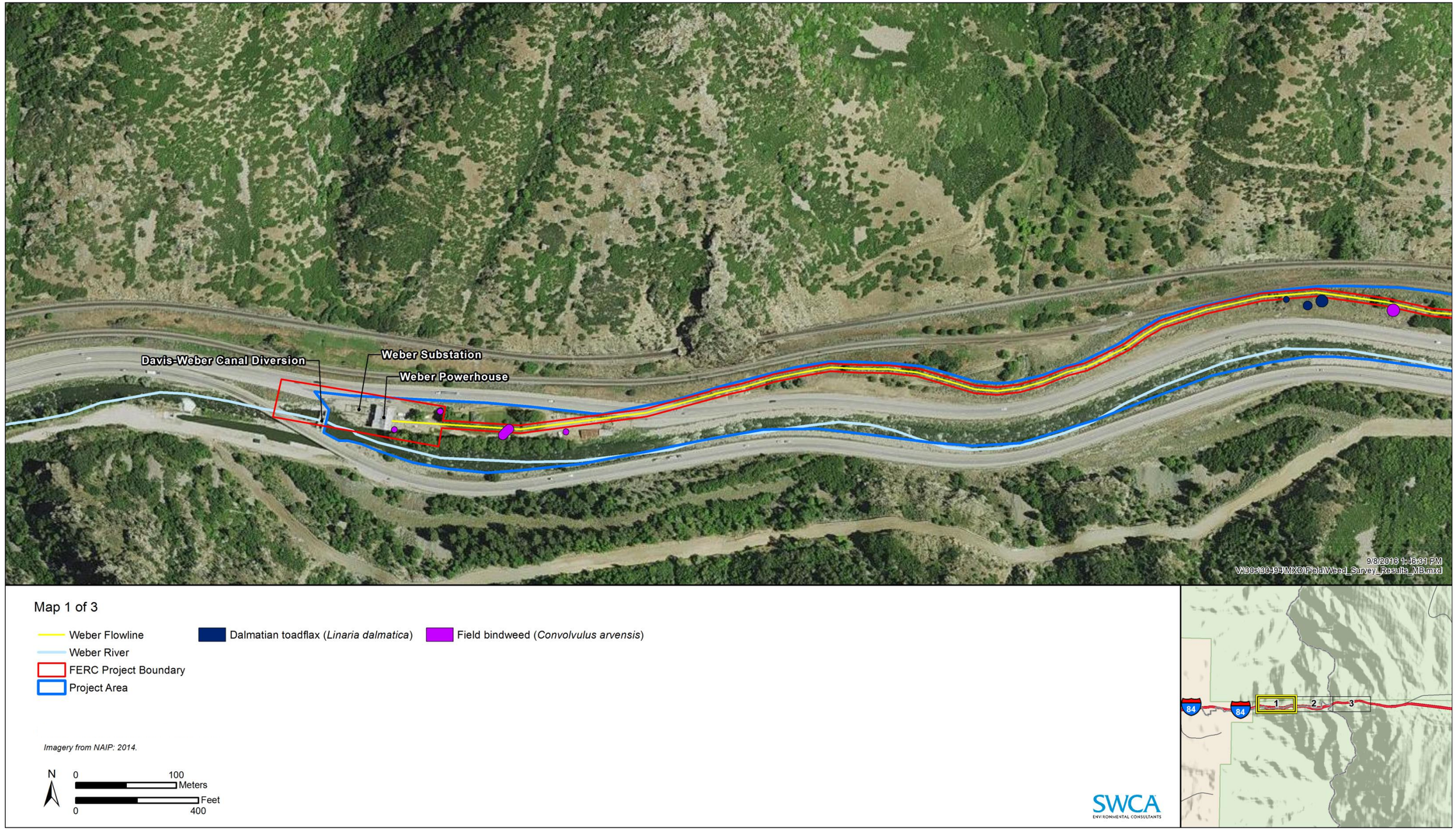

Figure A3. State- and county-listed noxious weed occurrences in and near the FERC Project Boundary, western portion of Project Area.

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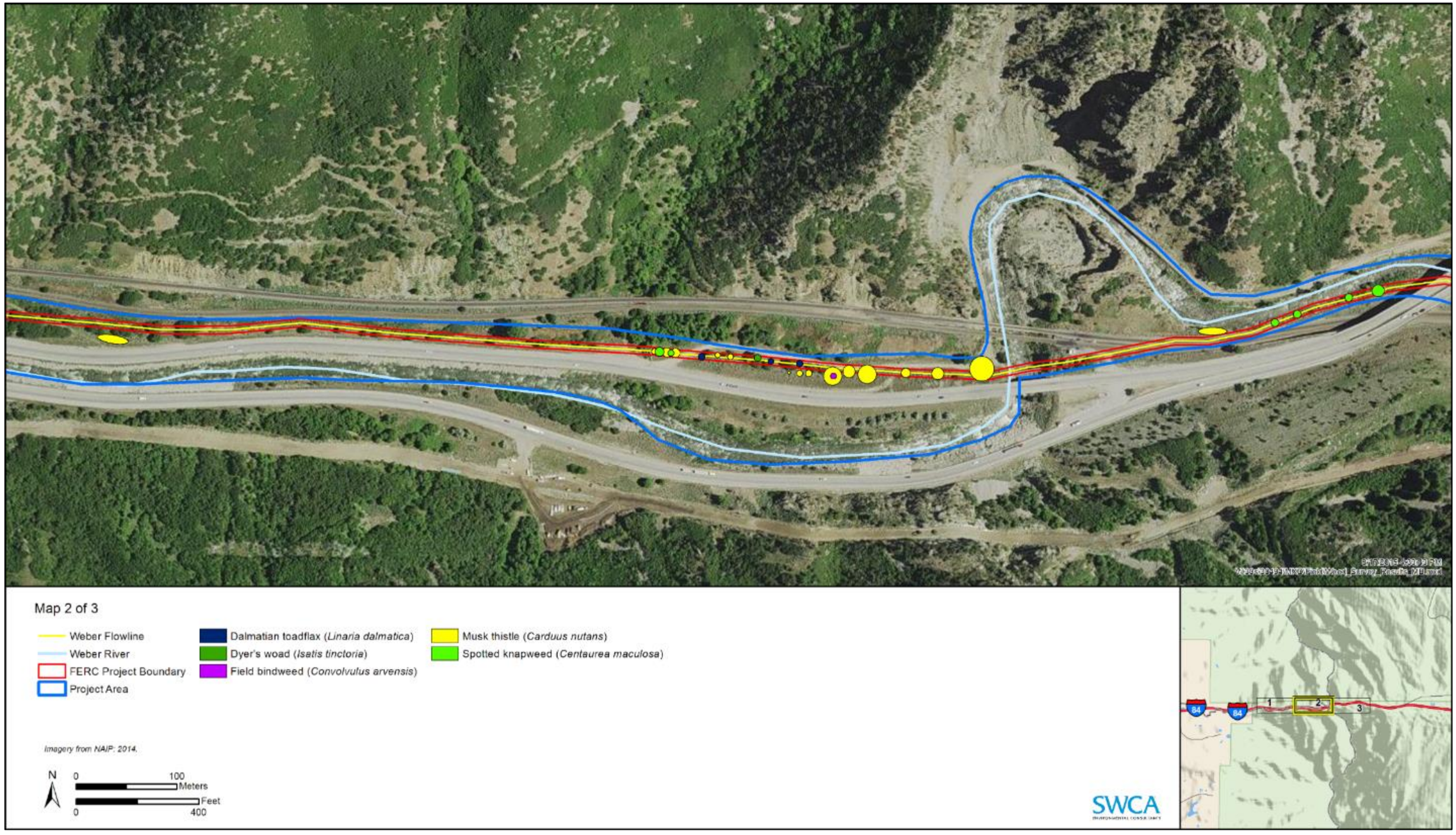

Figure A4. State- and county-listed noxious weed occurrences in and near the FERC Project Boundary, central portion of Project Area.

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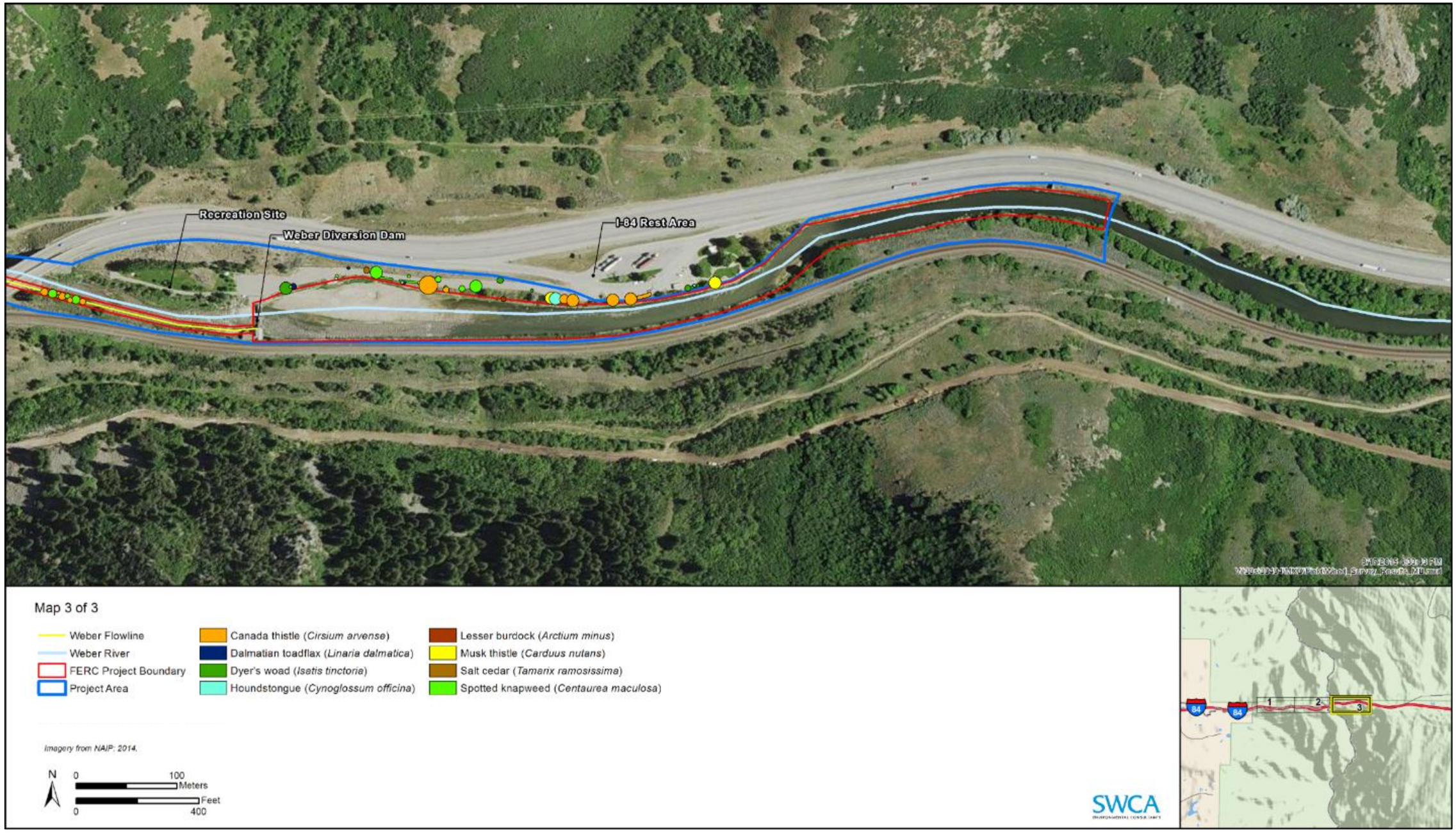

Figure A5. State- and county-listed noxious weed occurrences in and near the FERC Project Boundary, eastern portion of Project Area.

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