Adaptive Management Plan
for Bi-State Sage-Grouse Brood-Rearing Habitat on LADWP Lands in Long Valley

Mono County Board of Supervisors

April 6, 2021

Sage Grouse on Long Valley LADWP Lands: A Brief History

- Grouse habitat on LADWP lands in Bodie and Long Valley = 38,389 acres
- In Long Valley on LADWP lands, historic water distribution has supported high-quality brood-rearing habitat.
- 2013: LADWP adopted a Conservating Strategy for managing habitat
- 2014: MOU with U.S. Fish and Wildlife Service to formalize Strategy
- 2015 and 2018: Long Valley irrigation water reduced to very low/minimal amounts
- 2018: LADWP proposed “dry” ranch leases
- 2019: LADWP provided a Commitment Letter to the Service reiterating intent
- 2020: LADWP agreed to participate in developing an adaptive management plan

Technical Working Group

- Los Angeles Department of Water and Power
- U.S. Fish and Wildlife Service
- California Department of Fish and Wildlife
- Audubon Society
- Inyo National Forest
- Bureau of Land Management (Bishop Office)
- Local Ranchers
- Mono County

Adaptive Management Plan (AMP) Purpose

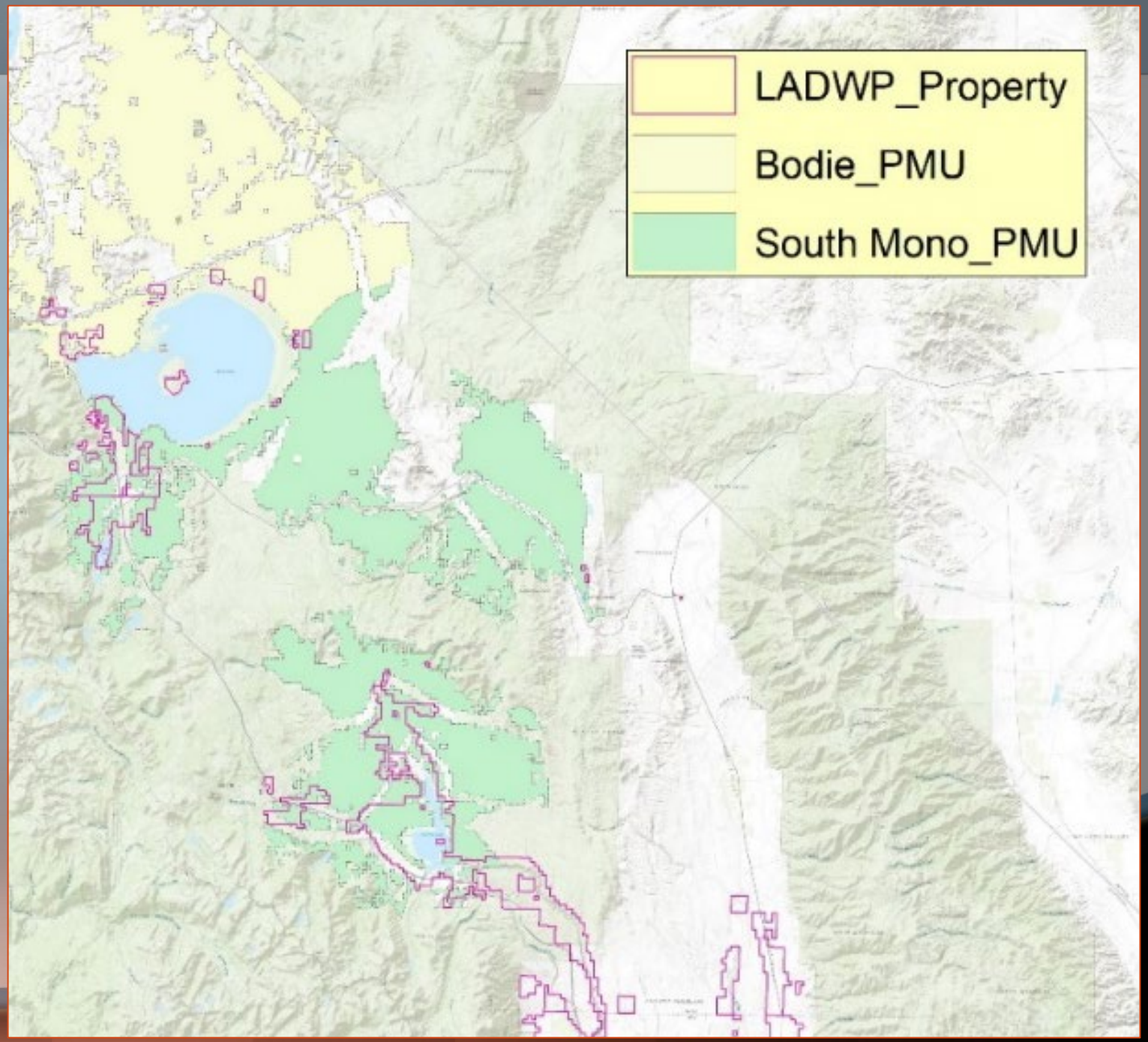
Together, LADWP and the Service are striving for the most habitat, in high quality condition, within LADWP's operational capacity (ownership, infrastructure, and operational necessities) and with the most efficient allocation of water. The AMP is intended to more fully describe LADWP's conservation activities that were identified in the 2019 Commitment Letter. In particular, the AMP will identify conservation activities for maintaining or improving the quality and quantity of mesic, brood-rearing habitat. The implementation of this AMP will maintain and improve brood-rearing habitat on LADWP lands, will benefit BSSG in Long Valley, and will help the Service meet standards associated with the Policy for the Evaluation of Conservation Efforts (PECE).

AMP Main Components

A living document using best available scientific knowledge and data to date, expected to be refined as lessons are learned.

- Management Area Focus
- Habitat Metrics and Targets
- Reporting and Accountability
- Annual Operations Planning & Adaptation

Project Area: South Mono Population Management Unit (PMU) on LADWP Lands

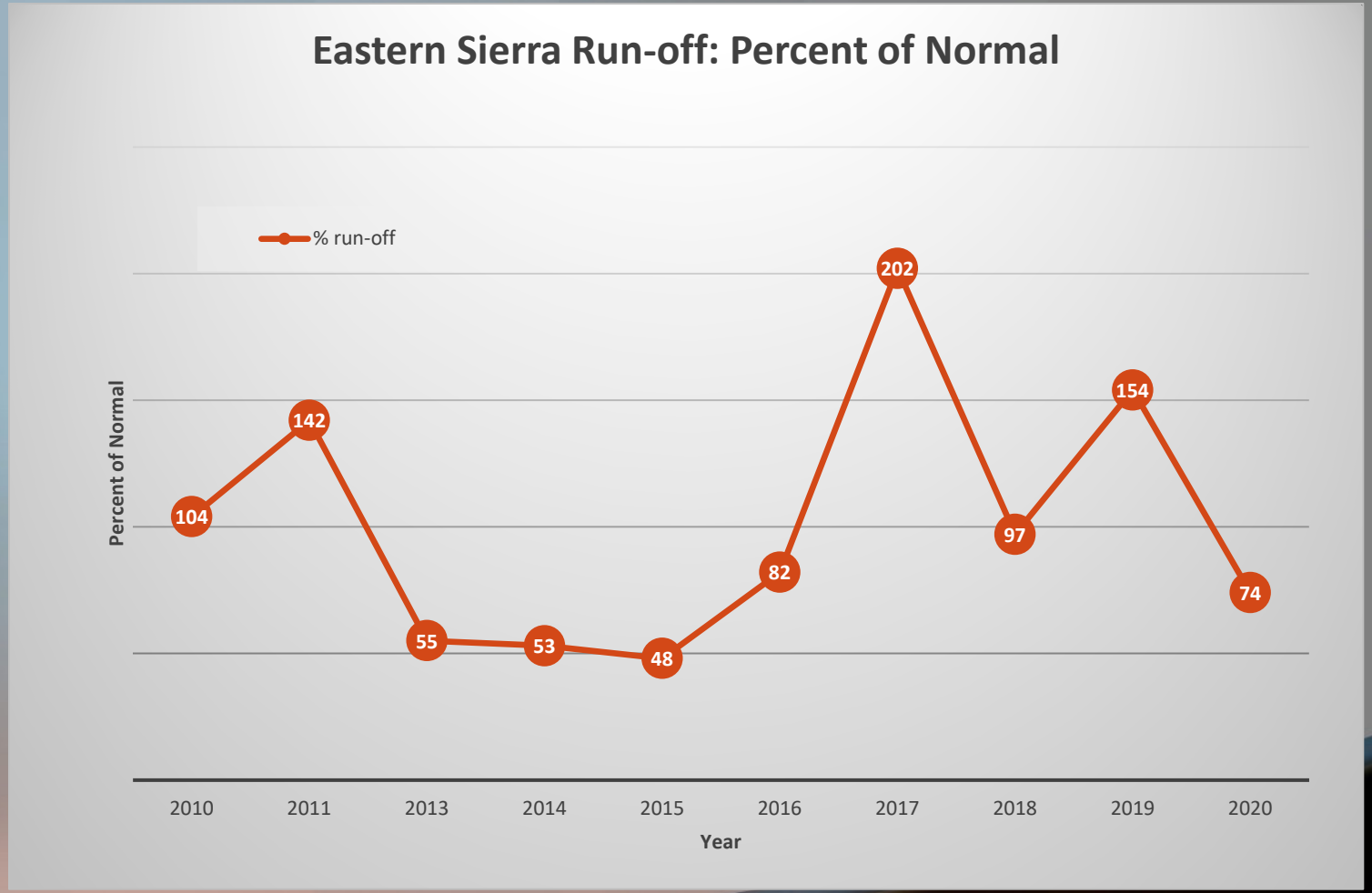


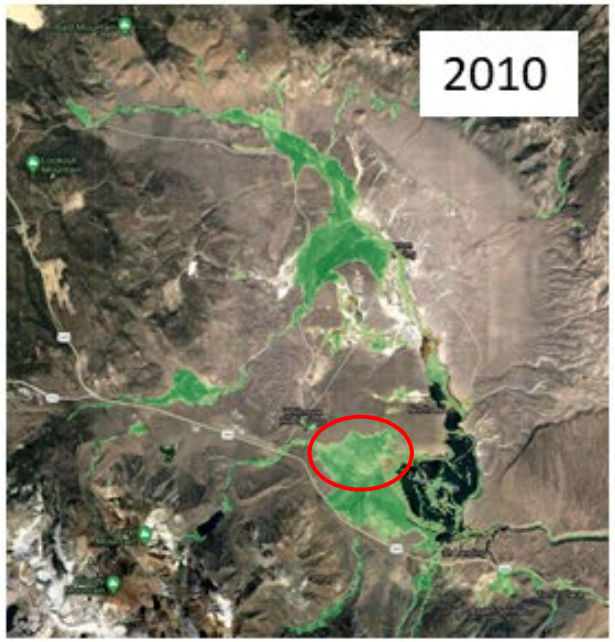
Criteria for Focusing the Management Area

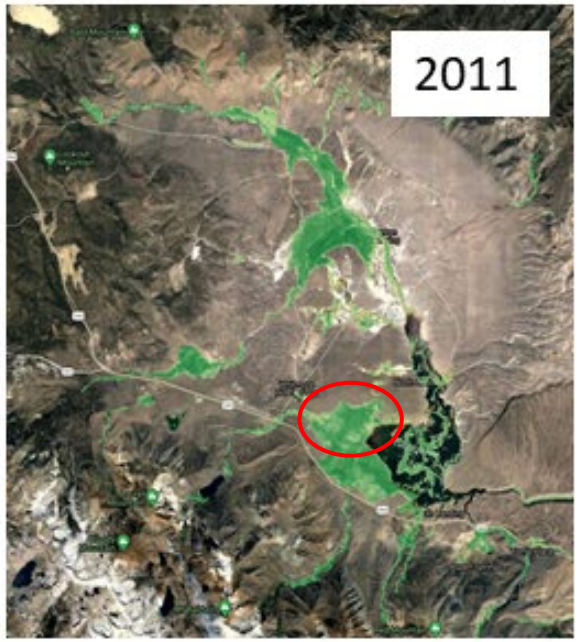
1. **Areas most susceptible to drought**
   - Eastern Sierra run off
   - Changes in mesic (green) habitat during drought years
2. **Locations of Bi-State sage grouse (BSSG) brood-rearing habitat on LADWP lands**
   - Review US Geologic Survey telemetry data
3. **Opportunities to maintain or improve habitat**
   - Existing infrastructure
   - Suitability

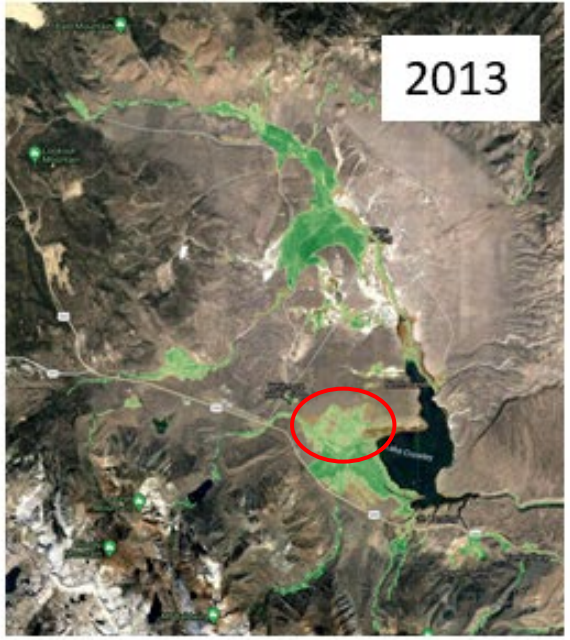
Identify Areas Susceptible to Drought

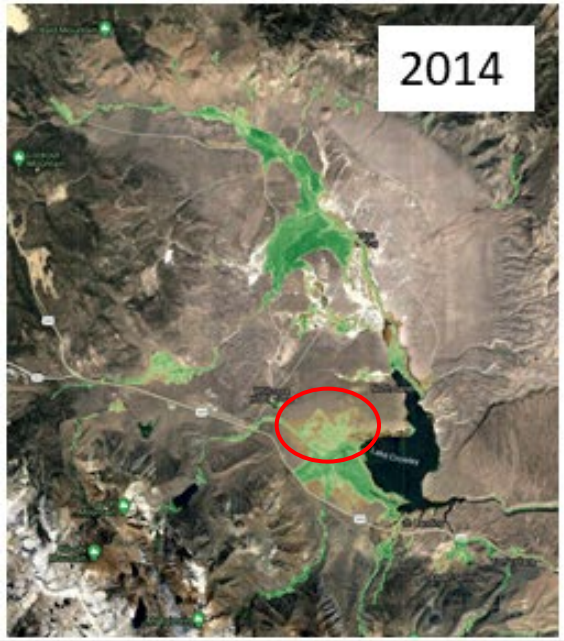
- Reviewed past 10 years of water run-off in the Eastern Sierra
- Focused on the four years of drought from 2013-2016

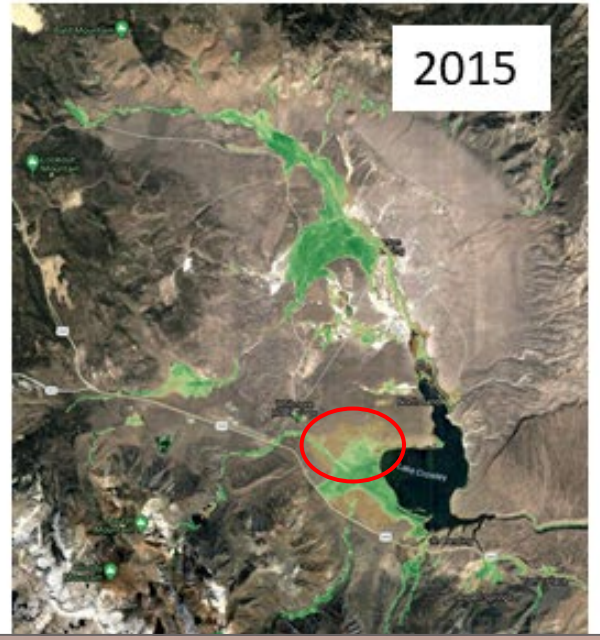


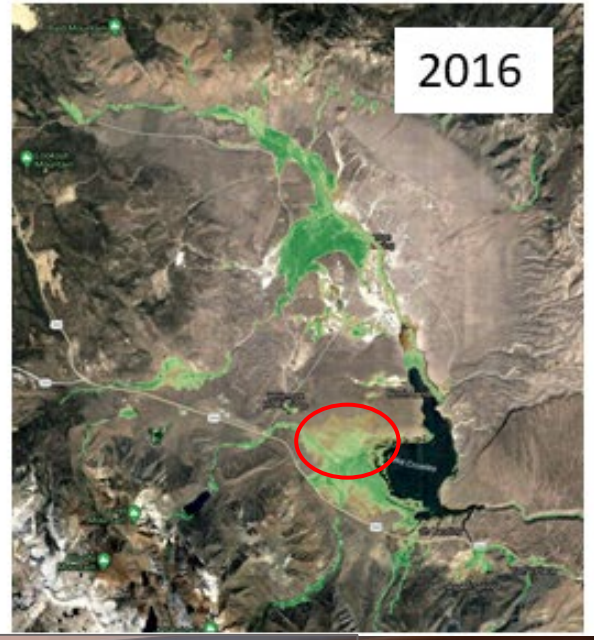


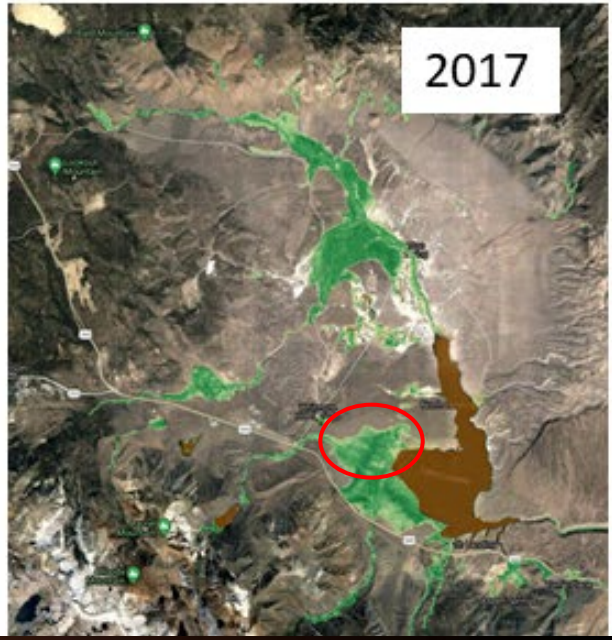












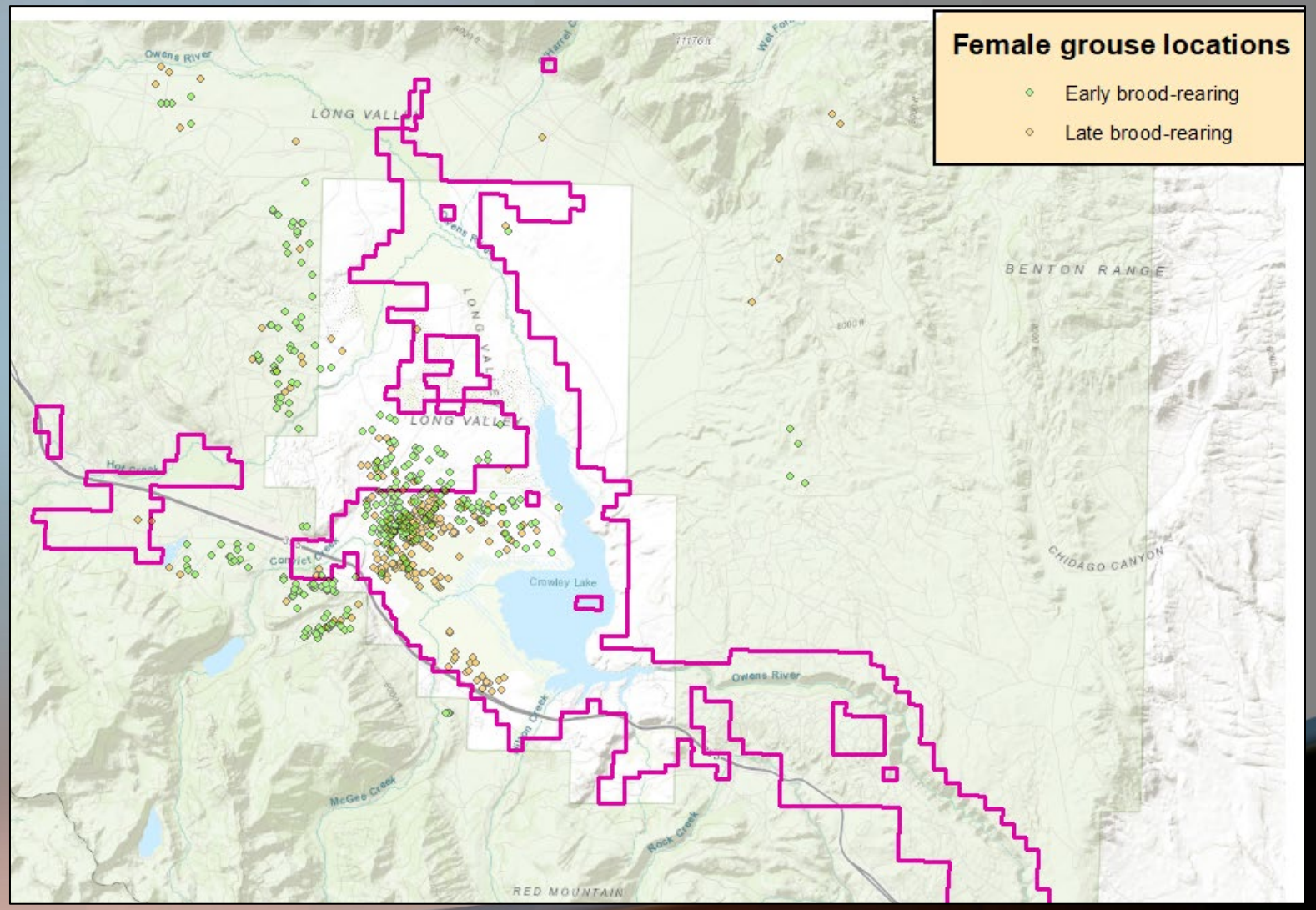
Natural Resource Conservation Service's (NRCS's) interactive online mapping tool:
https://map.sagegrouseinitiative.com/ecosystem/mesic-resources

Conclusions: Areas Most Susceptible to Drought

- Areas around Convict Creek experienced substantial changed during drought years
- Other areas (e.g., Upper Owens) did not exhibit similar flucutations
- This data suggests the pastures associated with Convict Creek ditches are the most susceptible to drought conditions.
- Other areas exhibit more resilience to drought.

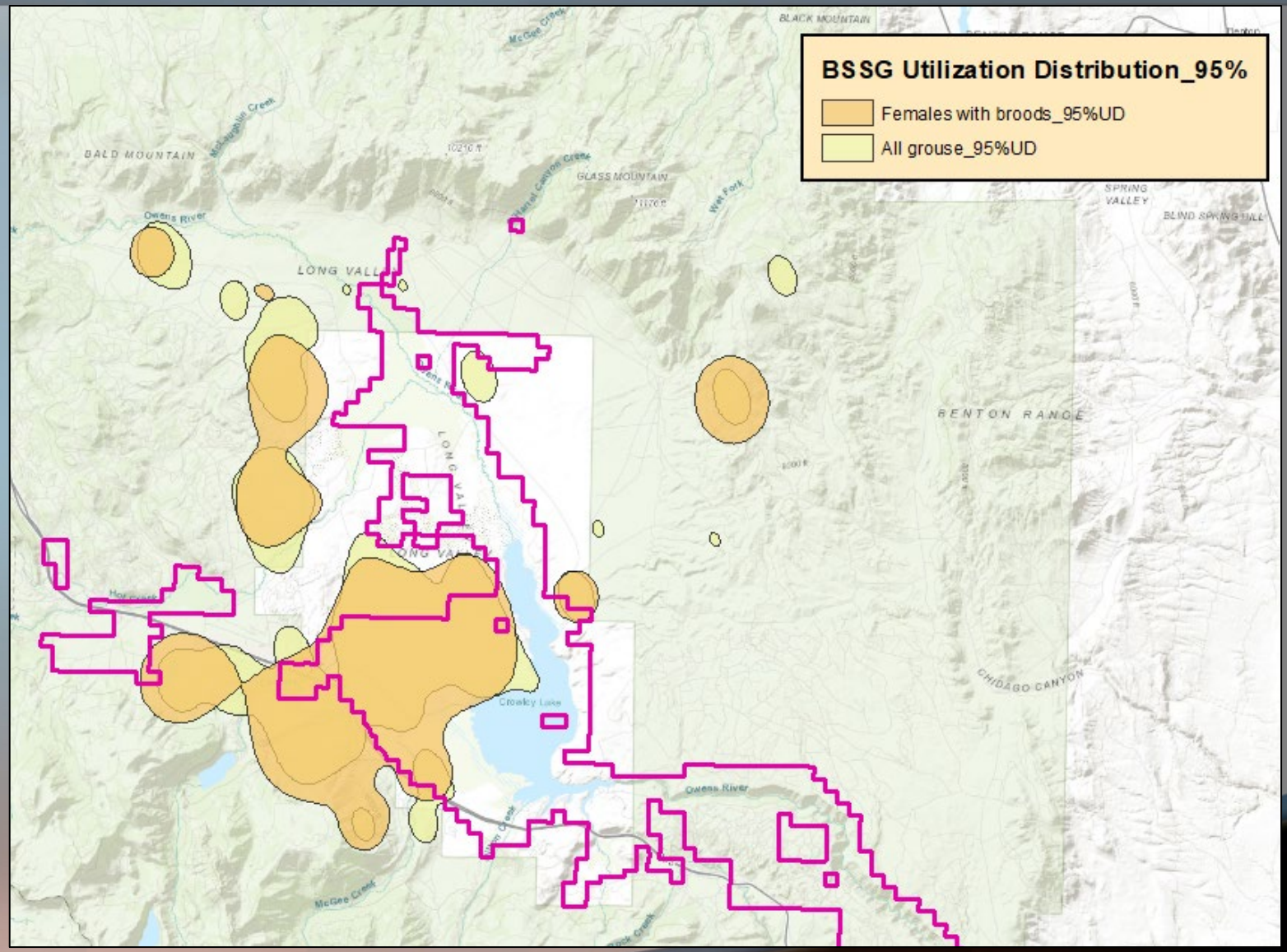
BSSG Brood-Rearing Habitat

- Mapped female grouse locations (VHF and GPS) from 2015-2019
- April 15-June 29 (early brood rearing) and June 30-September 15 (late brood rearing) distribution evaluated
- Females with broods not identified specifically
- Highest use: Convict Creek and McGee Creek
- Some use near Laurel Ponds
- Use in the Upper Owens River and Hot Creek areas are off LADWP property (although sightings reported)



BSSG Home Range

General use areas during May, June and July for collared females with broods and all collared sage grouse.

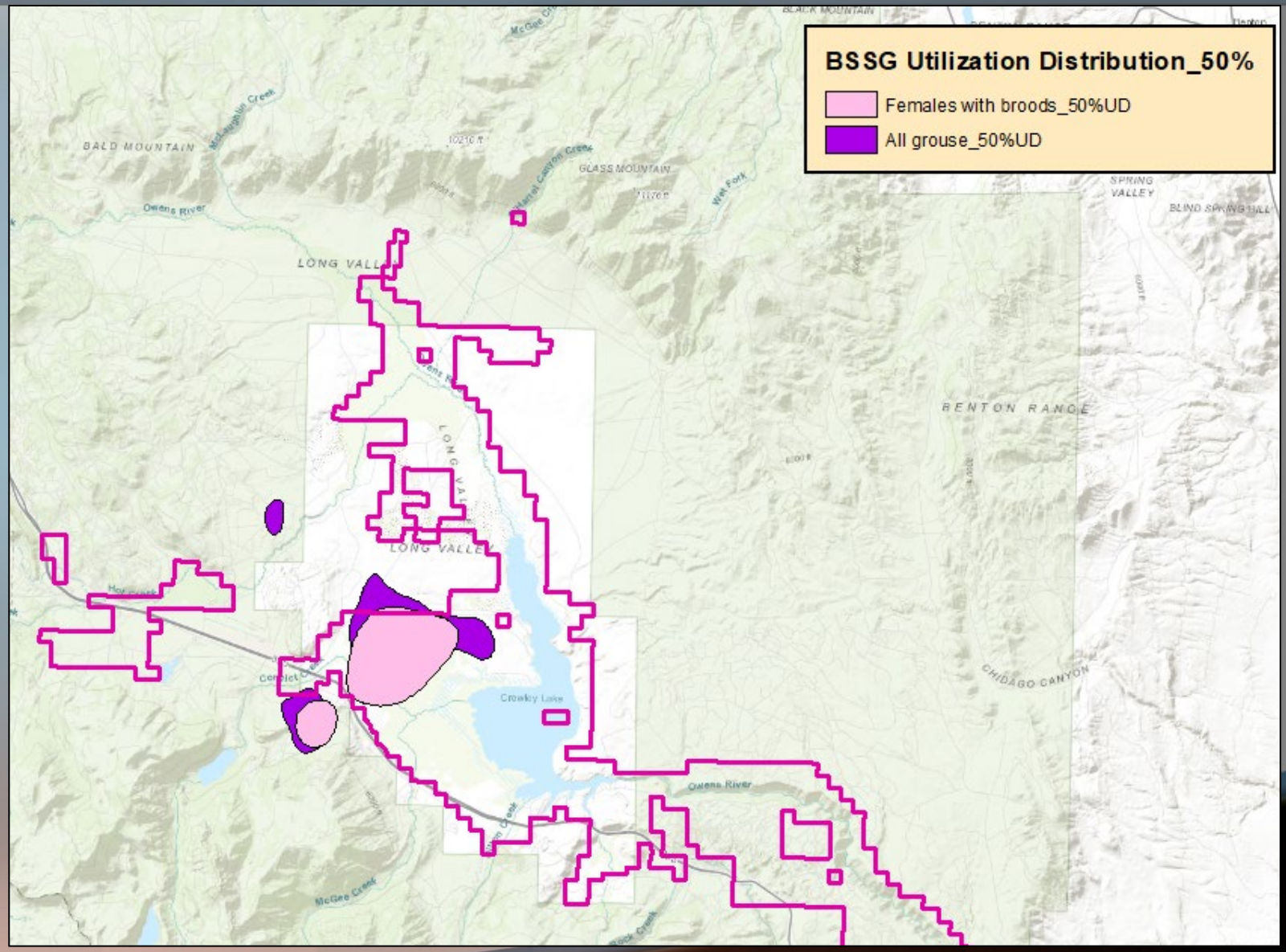


BSSG Core Range

Areas where grouse spend the majority of their time.

Grouped by collared females with broods and all sage grouse.

On LADWP land, majority of time spent in areas near Convict Creek.

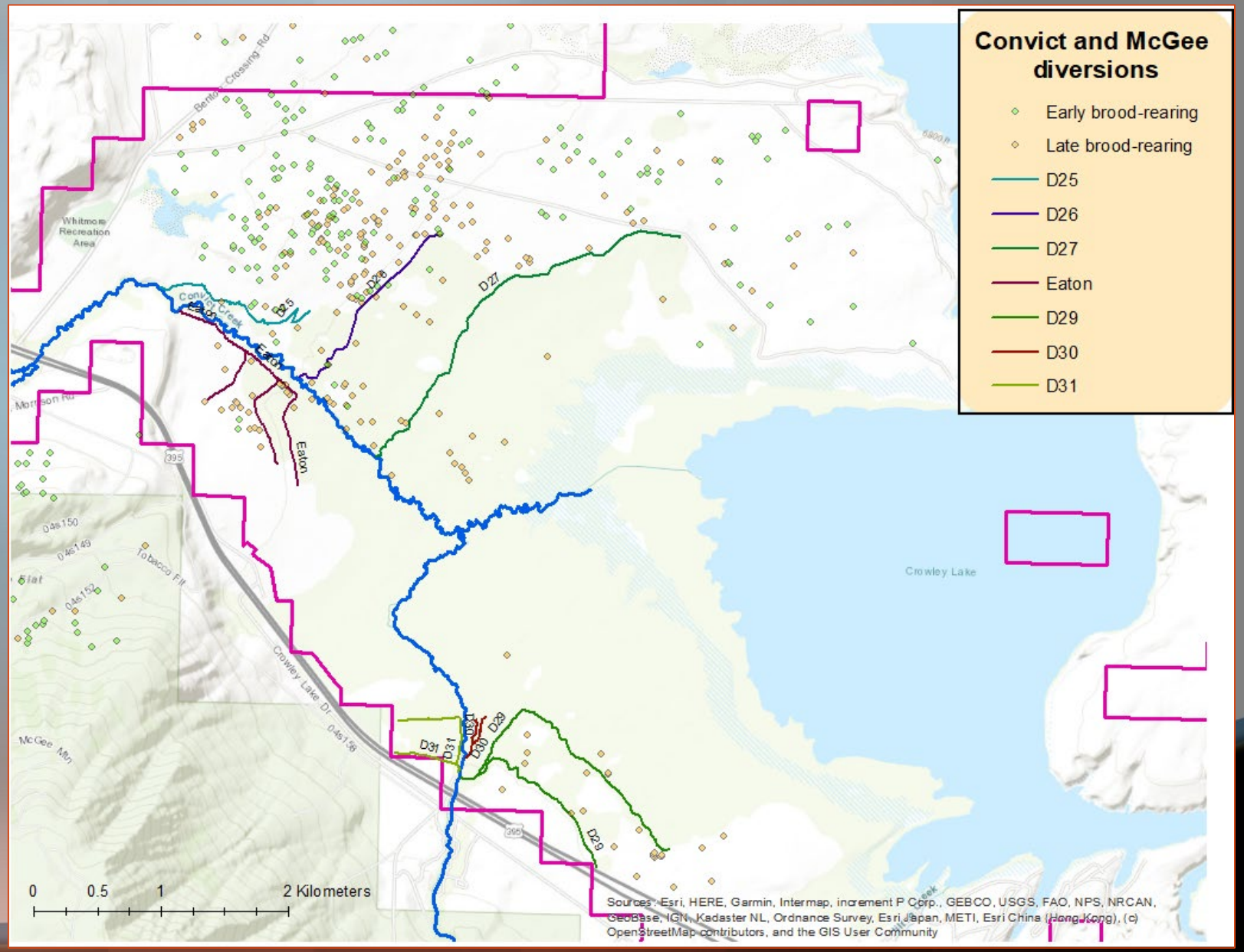


Conclusions: Brood-rearing Habitat

- Convict Creek: Most concentrated use
- McGee Creek: Some use, may be a refuge during droughts
- Laurel Creek/Laurel Pond: Important habitat
- Upper Owens: No telemetry data of grouse on LADWP land, anecdotal reports
- No apparent use around Hilton Creek or Hot Creek

Conclusion: Infrastructure

- Significant water infrastructure near Convict Creek
- Water infrastructure on McGee Creek
- No water infrastructure at Laurel Creek/Laurel Pond



Conclusion: AMP Focus Area

Based on the use of LADWP property by female BSSG during the spring and summer months and locations of existing water diversion infrastructure, **management to benefit brood-rearing habitat would be most effective along Convict Creek and McGee Creek.**

Habitat Metrics and Targets: Assumptions

- Managing pastures associated with Convict and McGee creeks will provide greatest brood-rearing habitat benefits.
- Must maintain 10 cubic feet per second (CFS) flow in both creeks.
- Minimum flow requirements in ditches/diversions in order to check water and irrigate.
- Infrastructure creation/construction and supplemental water sources are outside the scope of this plan.

Habitat Metrics and Targets

- Normalized difference vegetation index (NDVI) value ≥ 0.3 indicates high mesic quality and properly functioning meadow habitat
- After June 30, hens with broods select for habitat with NDVI ≥ 0.3 within 100 m of edge habitat.
- **Therefore, mesic habitat (NDVI ≥ 0.3) should be maintained in areas with heavy grouse use and within 100 m of edge habitat, creation of habitat in open areas should be avoided.**

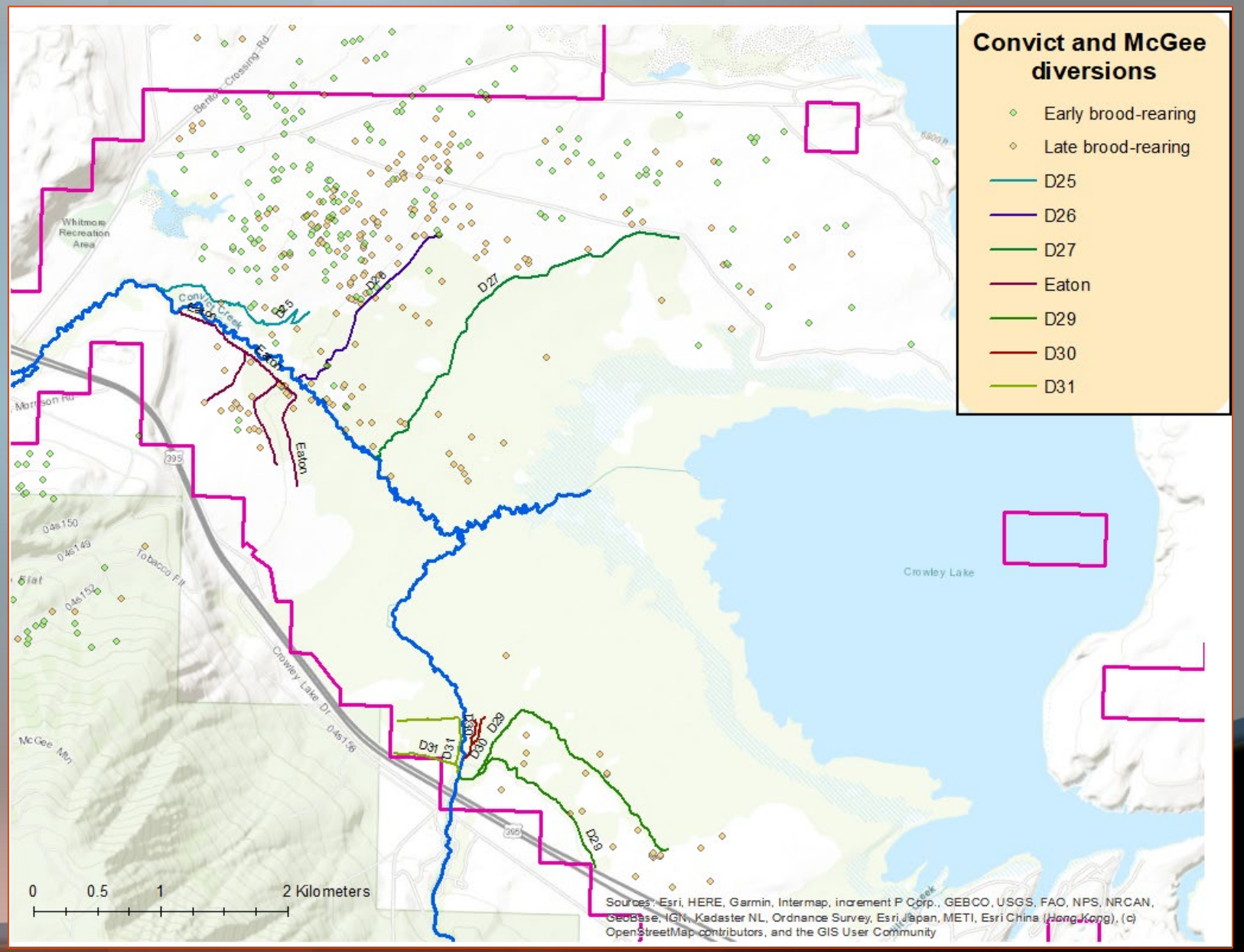
Habitat Priorities by Ditch/Diversion

Convict Creek

1. Diversion 26
2. Eaton Diversions
3. Diversion 25
4. Diversion 27 (to provide water to tail area, avoid greening middle area)

McGee Creek

1. Diversion 29 (upper and lower)



Reporting & Accountability

- Annual Report: Submitted by LADWP by December 31
  - Includes information relating to: water availability, management actions conducted, surveys and monitoring conducted, acres improved or maintained, adaptive management considerations/needs, collaborative participation
- The following are also monitored on a regular basis by LADWP (submitted by July 1):
  - Weeds
  - Wildfire
  - Livestock (including fencing)
  - Outdoor Recreation (including fencing)
  - Water Flow
  - Infrastructure
  - Habitat & Vegetation Composition

Annual Operations Plan & Adaptation

- Coordinated by LADWP and the US Fish and Wildlife Service (USFWS)
- **Winter Meeting** (late Feb./early March): Review water forecasts.
- **Spring Meeting** (around April 1): Review snowpack measurements and water estimates, recommend tactics for maintaining and enhancing brood-rearing habitat based on irrigation priorities and available water.
- **Summer Meeting** (~July 1): Field-based meeting to observe field conditions and discuss any modified recommendations.
- **Fall Meeting** (~October 1): Review field season, management actions, outcomes, review new science and adaptive management recommendations, review landscape-level population and habitat conditions.
- Data Gaps are recognized, and the plan will be improved as the best available science advances.

Questions?