Biological Resource Survey and Management Report

D

June 26, 1998

Mr. Steve French
Charter Properties
4111 Lusk Drive
Sacramento, CA 95864

SUBJECT: Bryte Ranch Preliminary Evaluation of Biological Resources

Dear Mr. French:

Jones & Stokes Associates would like to thank you again for the opportunity to assist in planning for the future of the Bryte Ranch property. The Bryte Ranch exhibits high-quality remnant landscape features, hinting at the character Sacramento County before European settlement. This letter summarizes our understanding of the property and documents our preliminary findings based on the site visit with you, me, and Chris Elliott on June 18, 1998.

GENERAL PROPERTY DESCRIPTION

The Bryte Ranch property (see Exhibit A) is approximately 570 acres and lies north of Calvine Road and west of Grant Line Road in southern Sacramento County. The property has an expansive wetland feature adjacent to Grant Line Road and has a significant natural vernal pool complex covering the majority of the site. In our preliminary estimates these wetland features may represent between 150 to 175 acres of wetland habitat.

The property was once part of the larger Bryte Ranch estate, and has been used as grazing land for dairy cattle over the last century and a half. The landscape is characterized by gently rolling microtopography, generally sloping toward Grant Line Road.

A berm which parallels Grant Line Road roughly bisects the property into two distinct terraces. The upper terrace has undergone minimal human disturbance and exhibits what is referred to as mima mound or mound-intermound topography (Jones & Stokes Associates 1994). The lower terrace (fronting Grant Line Road) has been cultivated, as evidenced by cropping patterns shown on the 1989 aerial photo (Exhibit A). A third terrace is in the extreme southern portion of the property, and is bound by Calvine and Grant Line Roads. This higher terrace is separated from the lower terrace along a berm near the access road and livestock chute on Grant Line Road. Laguna Creek is about 1,000 feet to the north of the property.

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Adjacent Land Use. The south Sacramento County area is undergoing many changes, including conversion of pasture to residential development and vineyards. The Bryte Ranch property is within the urban services boundary for Sacramento County. Vineyards now cover the property across Grant Line Road which had formerly been part of the historic Bryte Ranch. An older rural residential community borders the property on the west. Recently constructed single-family "ranchettes" are also found along Grant Line Road. Other adjacent lands are in agricultural use. Grant Line Road and Calvine Road are currently undergoing improvements to increase capacity and improve access to the area.

The Klotz property, bordering the Bryte Ranch property on the north, has been investigated for biological resources by Jones & Stokes Associates as part of evaluating potential use as a stormwater detention facility along Laguna Creek for the Sacramento County Public Works Department. A suitability assessment for vernal pool mitigation banking and preservation was also conducted as part of our work under that contract (Jones & Stokes Associates 1994).

RESOURCES

Soils. Soils at the Bryte Ranch property, as mapped by the Natural Resource Conservation Service (formerly Soil Conservation Service), are primarily San Joaquin silt loams (0 to 3 percent slopes and 3 to 8 percent slopes) and Galt clay (0 to 2 percent slopes). The San Joaquin-Galt complex (0 to 3 percent slopes) map unit has also been identified at the site. (U.S. Soil Conservation Service 1993). These map units are all identified as having hydric soil inclusions (i.e., potential to support wetlands) (U.S. Soil Conservation Service 1993). The preliminary site visit confirmed presence of hydric soils. Hydric soils, hydrophytic vegetation, and wetland hydrology are the three indicators that must be present to determine wetland status, under jurisdiction of the U.S. Army Corps of Engineers (Environmental Laboratory 1987).

Vegetative Communities. The upper terraces of the Bryte Ranch property consist of rolling grassland with fairly dramatic surface relief. Depressional areas on these terraces are classified as vernal pools. Some vernal pools are connected by drainage swales, while others are isolated depressions without inflowing or outflowing drainages. Most of the vernal pools and swales appear to qualify as wetlands under federal jurisdiction under the Clean Water Act. These wetlands undergo an aquatic phase in the winter and early spring. During summer, these habitats are desiccated, as are the surrounding grasslands, and support little plant or wildlife use.

Vegetation in the pools is largely consistent with other vernal pools in the geographic area and contain typical species including: ornate downingia (*Downingia ornatissima*), woolly marbles (*Psilocarphus brevissimus*), white-head navarretia (*Navarretia leucocephala*), Orcutt's quillwort (*Isoetes orcuttii*), hairgrass (*Deschampsia danthonioides*), pogogyne (*Pogogyne ziziphoroides*), spike-rush (*Eleocharis macrostachya*), and coyote thistle (*Eryngium vaseyi*). The lower terrace of the property has many of the same species, but is generally less diverse due to past agricultural

practices. Upland areas were primarily vegetated by annual exotic species, such as wild oat (*Avena fatua*), various bromes (*Bromus* spp.), and virgate tarweed (*Holocarpha virgata*). The site is treeless.

Special-status Plants. Previous investigations conducted by Jones & Stokes Associates in the immediate project vicinity have indicated presence of five special-status plants: slender Orcutt grass (*Orcuttia tenuis*), Greene's legenere (*Legenere limosa*), dwarf downingia (*Downingia humilis*), Bogg's Lake hedge-hysopp (*Gratiola heterosepala*), and Douglas' pogogyne (*Pogogyne douglasii* subsp. *parviflora*). Though none were observed during our preliminary site visit, these species have the potential to occur at the Bryte Ranch property.

Wildlife Habitat Potential. The wetlands at the Bryte Ranch property are likely to host special-status invertebrate species. Surveys and assessments conducted in the vicinity have encountered Vernal pool tadpole shrimp (*Lepidurus packardi*), Vernal pool fairy shrimp (*Branchinecta lynchi*), and the non-listed California linderiella (*Linderiella occidentalis*), and indicate a high probability of presence of these species on the Bryte Ranch property. Other species for which the property is within the designated geographic range, and that may potentially occur at the site include: California tiger salamander (*Ambystoma californiense*), Western spadefoot toad (*Scaphiopus hammondii*), Giant garter snake (*Thamnophis couchi gigas*), Swainson's hawk (*Buteo swainsonii*), and White-tailed kite (*Elanus leucurus*).

SITE OPPORTUNITIES

Mitigation Bank. Criteria for determining site suitability for vernal pool mitigation banking include representativeness and uniqueness of the project site, degree of degradation, defensibility of the project site, and presence or absence of special-status species. Representativeness and uniqueness are expressions of the range of pool types and species composition at the site relative to other vernal pool sites in the greater region. The relatively low degree of degradation of large portions of the Bryte Ranch property, as shown by no obvious evidence of past soil tilling or earthmoving, provides for a diversity of pool sizes, depths, and configurations. This diversity contributes to a wide range of species and pool types; and, therefore, a high degree of representativeness and uniqueness.

The vast size and contiguous character of the Bryte Ranch property offers a high degree of defensibility; i.e., protection from adjacent land use. Vernal pool habitat proposed for preservation at adjacent sites contributes to maintaining the integrity and defensibility of the area. Presence or absence of special-status will need to be determined by more detailed field investigations.

In summary, based on the quality, quantity, and type of vernal pools at the site, as well as other biological and spatial characteristics, the Bryte Ranch property has high potential for use as a mitigation bank.

Please be aware that many other factors must be considered in determining the solvency and suitability of a mitigation bank, beyond those factors directly influenced by the biology of the site. These factors include market demand, return on investment and need for long term land stewardship commitments.

Conservation Credits. Because the Bryte Ranch property contains an estimated 150 to 175 acres of jurisdictional waters of the United States, and potential habitat for special-status invertebrate species, we believe the site offers excellent opportunities for conservation of vernal pool habitat. It is likely that the U.S. Fish & Wildlife Service (USFWS) would authorize the establishment of a vernal pool Conservation Bank. This bank would allow for impacts on other properties to be mitigated at the Bryte Ranch. However, prior to selling any credits, the specific credits and banking documents need to be established with the USFWS.

Habitat Conservation Plan. As part of the development of the Sacramento Habitat Conservation Plan (HCP), the Bryte Ranch property may be considered a suitable site for conservation within the urban services boundary. Therefore, it may be possible that a mechanism be established to provide funding for the acquisition of conservation and/or restoration credits. Jones & Stokes Associates is working for Sacramento County on the HCP and could assist in further development of this option.

Retail/Commercial Development. The upper terrace at the extreme southern portion of the Bryte Ranch property may have high potential as developable area. Our preliminary investigation of the site yielded that this terrace is dominated by exotic annual upland grasses with few, scattered vernal pools. This terrace appears to have undergone greater disturbance relative to the vernal pool landscape on the upper terrace in the northwest portion of the site.

The potential developable area (as shown on Exhibit A), measuring approximately 62 acres, is also the least buffered area on the property; i.e., most influenced by adjacent land uses. This is due to the proximity of existing residential development to the west and the corridors of Calvine Road and Grant Line Road forming two borders of this parcel. As discussed earlier, these roads are undergoing improvements to increase vehicle capacity and facilitate improved access to the area.

Because of nearby existing and planned residential development, and the situation of the property at the intersection of these two main transportation routes through the area, this 62-acre parcel may be highly suitable for retail/commercial development. Such development could be planned to have minimal habitat impacts. Any impacts could likely be mitigated by habitat preservation and enhancement on the remaining property. Prior to this property being developed, considerable environmental documentation and permits would be required. These requirements likely will include compliance with the California Environmental Quality Act, the Clean Water Act, the National Historic Preservation Act, and the Endangered Species Act.

Please note that this determination of developable area is preliminary and conceptual only.

RECOMMENDATIONS

Our recommendations for your next action would be to quantify and define the resources at the Bryte Ranch property through more detailed field investigation. This work should include conducting botanical and wildlife surveys to determine the presence or absence of special-status species, including floristic analysis and sampling for vernal pool invertebrates. A wetland delineation should also be conducted to determine the type and extent of wetlands under jurisdiction of the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. Jones & Stokes Associates' staff have expertise and experience in conducting biological field work and wetland regulatory compliance in the south Sacramento County area, and would be enthusiastic to assist you in these efforts.

We look forward to the opportunity to continue working with you on this interesting and impressive property. If you have any further questions or comments, or if we may be of further assistance, please call me or Chris Elliott at 916/737-3000.

Sincerely,

CHRISTOPHER C. ELLIOTT
for Robert Francisco
Associate Principal

Enclosure

RF/CE

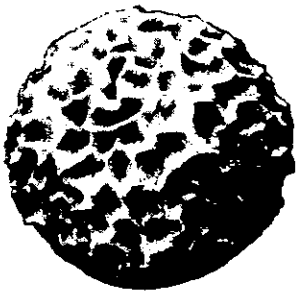
Special Status Invertebrate DRY Survey

NINETY-DAY REPORT

USFWS TAKE PERMIT # PRT-836079

SURVEY FOR THE BRYTE RANCH MITIGATION BANK PROJECT IN SACRAMENTO COUNTY, CALIFORNIA.

REH #98-13



Prepared By:

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September 12, 1998
DATE

Introduction

This DRY SURVEY report is required under United States Fish and Wildlife Service permit # PRT-836079. The permit expires on February 4, 2001.

A survey was conducted to determine the presence or absence of federally listed fairy and tadpole shrimp for the purpose of establishing Mitigation Banking Credits. Permission to conduct the survey was requested by letter and fax on August 21, 1998. Permission was granted by Mr. Brian Tweed on August 25, 1998.

Project Description: The proposed project is a mitigation bank in southern Sacramento County.

Summary Conclusion: Listed Large Branchiopods were found (*B. lynchi*, *L. packardi*).

Required Information

1. The project site is located on the attached photocopy of a U. S. Geological Survey Elk Grove, California, 7.5 minute topographic map (Attachment 1). The specific sites sampled are located in Township T7N, R6E Sections 11, 13 and 14. This area is former agricultural or range land and is currently open space.

   Note that the location on the survey request map differs from the locations in this report. See Figures 1 and 2 below. Location 1 was moved to a local low near the base of the upper terrace. It was moved to increase the probability of finding tadpole shrimp cysts.

2. Color photographic 35 mm slides of the project site are included in the attached slide page (Attachment 2).

3. The estimated number of crustacean cysts observed in soil samples from each pool or swale is listed in the attached data sheets. Estimates for the project are as follows:

Table 1: Cysts per ml from individual pools (Mean value, N=5 sub-samples).

Species	*M1*	*M2*	*M3*
Linderiella occidentalis			
Branchinecta nr. *lynchi*	1.0	1.8	12.6
Branchinecta nr.*conservatio*			
Branchinecta nr. *longiantenna*			
Branchinecta sp.			
Notostraca	2.2	3.0	6.6

Estimates are cysts per 100ml soil sample.

4. Cysts removed from soil samples were placed on SEM stubs. Cysts not removed were placed in filter papers, dried immediately, and stored in the filter papers.

5. Qualitative description of the vernal pool community: The project is part of a former dairy cattle operation. Of nearly 570 acres, 150-175 acres may be wetlands (Jones and Stokes, 1998).

   The property may be divided into two topographic units. The northern part of the property is relatively high compared to the south central and eastern area near Grant Line Road.

   Two relative high areas are located in the northeastern corner (100 feet) and western border (108 feet). The soils of the high areas are Redding loam and San Joaquin silt loam.

Two relative low areas are located in the central-west (<27.4m or 90 ft) and south central (±26.2m or 86 ft) part of the ranch. The central west low area is a large, very shallow, depression that drains to the northwest. The southern low area is a very large, shallow depression that has been plowed or leveled. This southern pool is crossed by at least two low ditches that appear to bring irrigation water to the eastern side of the pool. The soils of both low areas are Galt clays.

The northern area is a large relatively flat terrace plain that contains many swales and isolated depressions. The plain rises abruptly (1.2-1.8m or 4-6 ft) along the north side of the large southern pool. The soils of this plain are San Joaquin silt loams and San Joaquin-Galt complexes. Drainage from this area moves northwest to Laguna Creek which flows southwest across the northwestern corner of the property.

No sensitive plant species were identified during this late summer dry survey.

6. The location of listed and non-listed vernal pool crustaceans observed is noted on the attached tographic map and in Table 1.

7. The survey methodology used was that described in guidance attached to Permit # PRT-836079 as modified in the survey request letter. Permission was granted, by Mr. Brian Tweed, to collect only five (5) samples from each pool for the purpose of determining mitigation bank credits. Permission to section cysts was received from Ms. Deblyn Mead.

8. Information including dates of field visits, air temperature and weather conditions, water temperature, turbidity, conductivity and depth of sampling site are summarized below and included in the attached field survey forms (Attachment 3). This summary reports dry soil sample conditions and therefore some of the chemical tests are not appropriate.

Table 2: Field Conditions.

Test	*Field Conditions*
Air Temperature (°C)	20-26°C @0615-0945am
Weather	Sunny, dry
Water Temperature	NA
Turbidity (NTU)	NA
Conductivity (µmhos)	NA
Depth (m) (visual estimate)	0.2-0.5m
pH	NA
Total Alkalinity (mg/l)	NA

NA = not available or not applicable. Maximums and minimums for the entire project are summarized above, Details are available in the attached data sheets.

9. Additional water quality data: Not applicable.

10. Field forms are attached.

11. Notes: Broken cysts were counted if more than half a cyst was found. Many broken cysts were filled with silt and/or detritus or invertebrate housekeeping as expected from cysts that remain after hatching last season. Site M1 was a local low and had increased

cattle impacts and little vegetative cover. Diversity was low in this area as expected. Sites M2 and M3 appeared of higher quality prior to sampling and showed higher faunal diversity and abundance. All 3 sites contained whole cysts that appeared viable. A selected set of notostracan cysts was cut open to confirm notostracan cysts. A variety of objects were found that are similar to, but are not, notostracan cysts.

Conclusion

All three pools contain viable populations of listed large branchipods.

Branchinecta cysts with characters similar to those of *B. lynchi* were found in abundance in an upper terrace pool and in lesser numbers in the southern pool and a terrace pool. I am confident that these cysts would prove to be *B. lynchi* if cultured. Additional cysts with characters that are not clearly representative of *B. lynchi* were also found. These may be *B. lynchi*, but could be either *B. lindahli* or *B.* "midvalley". However, the range of characteristics observed probably represents only one species and I expect that only one species would be found if all cysts were cultured.

Notostracan (tadpole shrimp) cysts ere found in all 3 pools. Objects similar to cysts of *Lepidurus packardi* were cut open to verify tertiary envelope (cyst outer covering) characters. This procedure allows discrimination between notostracan cysts and non-cysts such as clay or sand balls, invertebrate housekeeping, and fruits. Positive genus or species level identification is not possible without Scanning Electron Microscopy (SEM) and/or culturing. I am confident that these cysts are Notostracans. The only notostracan expected in this habitat is *Lepidurus packardi* and I an confident that this is the species that would be cultured from these cysts.

Contact

If you have any questions or require more information about this invertebrate survey, please contact Richard Hill at (916) 962-2431 or by e-mail or **REHill@ix.netcom.com**.

Cc: Steve French

DFG

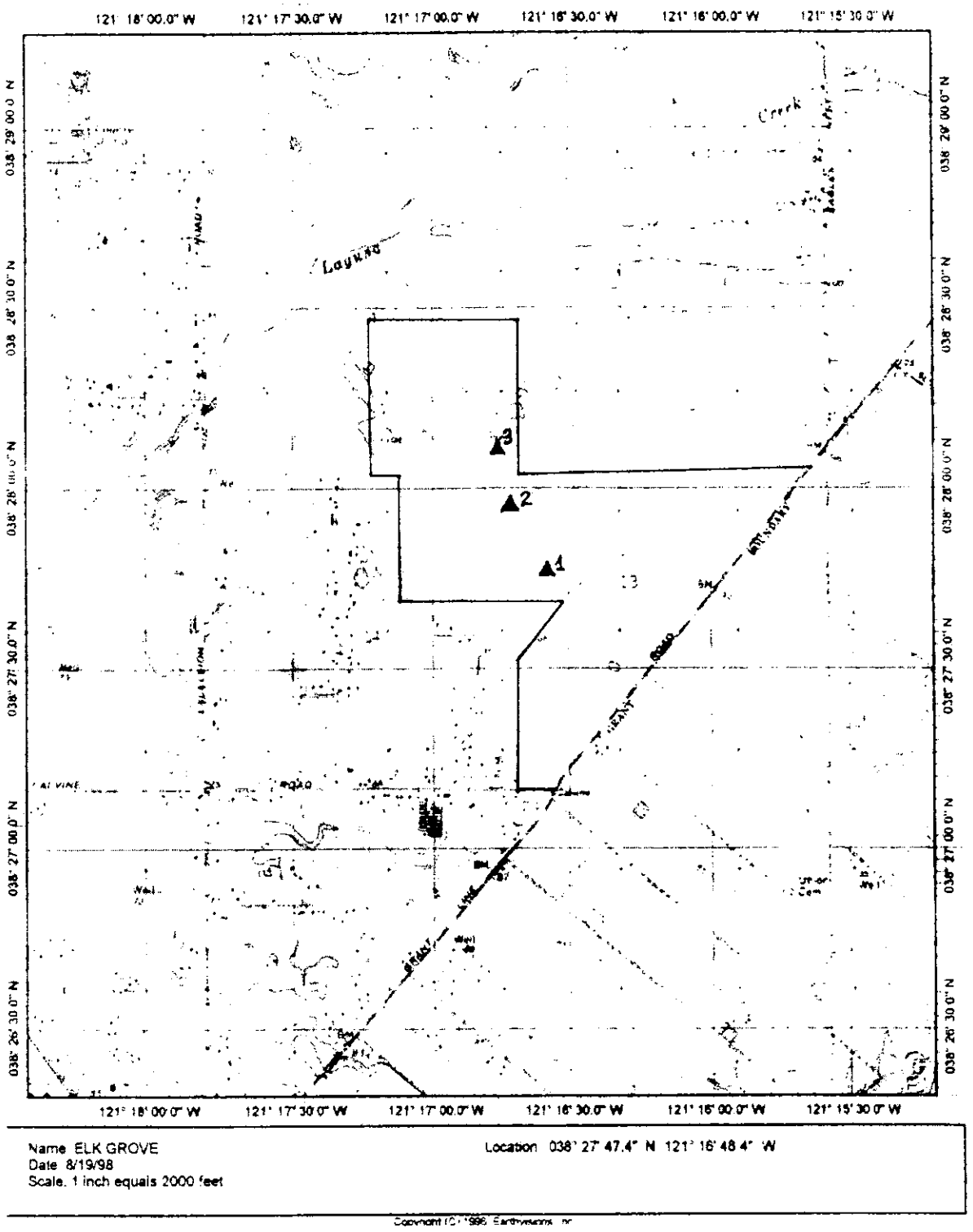

Figure 1. Sampling locations, Bryte Ranch Mitigation Bank (boundries approximate).

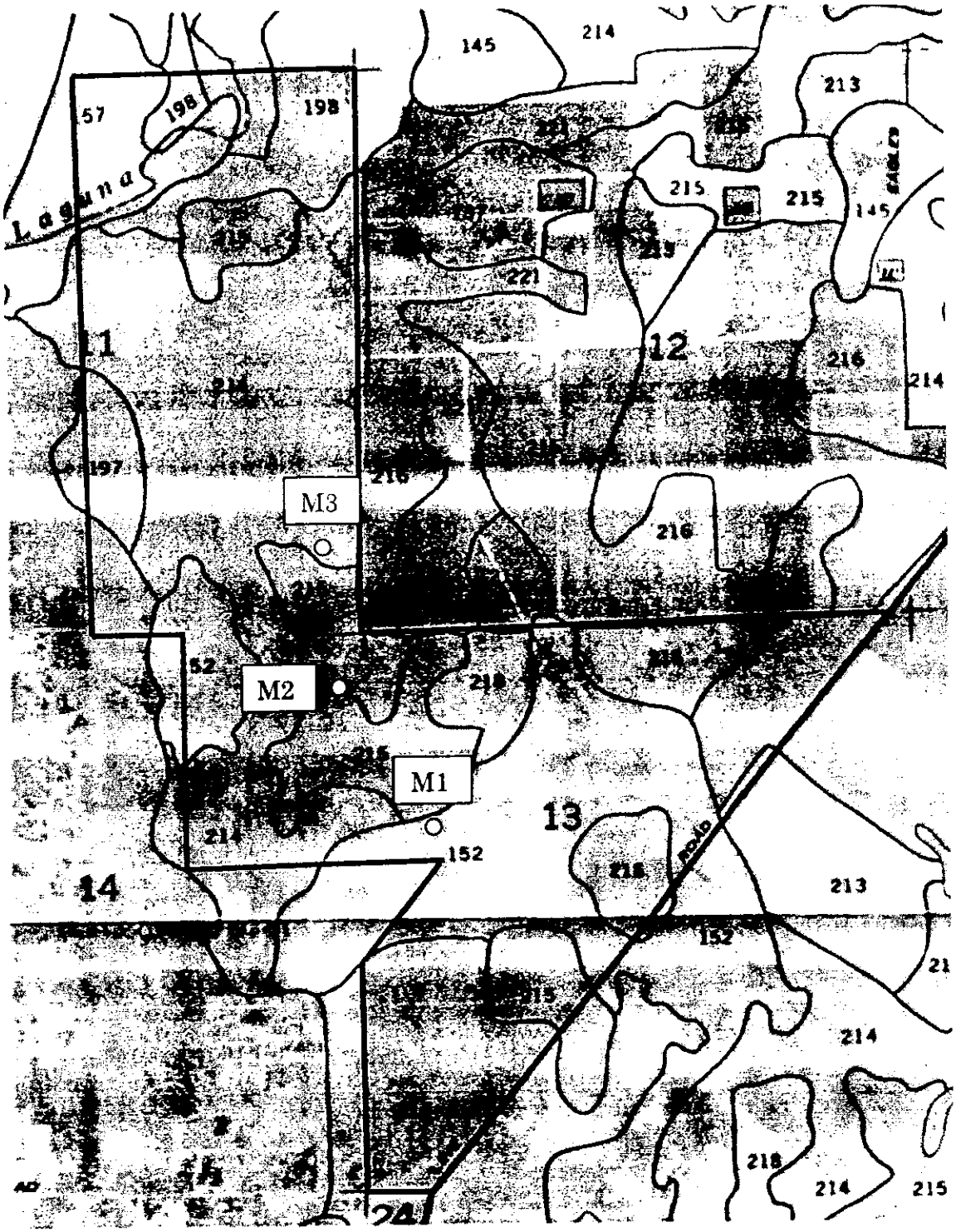

Figure 2: Bryte Ranch–Approximate boundary, collection sites and soils. Soil series: 145–Fiddyment fine sandy loam, 1-8% (hills); 152–Galt Clay, 0-2% (low terraces); 157–Hedge loam, 0-2% (low terraces); 197–Redding loam, 2-8% (low terraces and alluvial flats near high terrace drainages); 198-Redding gravelly loam, 0-8% (high terraces); 213–San Joaquin silt loam, leveled, 0-1% (low terraces); 214–San Joaquin silt loam, 0-3% (low terraces); 215–San Joaquin silt loam, 3-8% (low terraces); 218–San Joaquin-Galt complex, 0-3% (low terraces). Soil Survey of Sacramento County, 1993.