

November 18, 2007

To: Teresa Beddoe, Project Manager  
and  
Raymond Hall, Coastal Permit Administrator  
790 South Franklin Street  
Fort Bragg, CA 95437

From: Jon Thompson  
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**SUBJECT:** CDP#55-2006

Gualala, Mendocino County: Bower Ltd. Trust, Bower Ltd. Partnership (agent: Rau and Associates); proposed Gualala Bluff concrete block retaining wall.

Dear Ms. Beddoe and Mr Hall:

I am a private botanical consultant with a Bachelors of Science in botany. I have over sixteen years of professional experience in the field of botany and I have conducted botanical surveys in Mendocino County for over six years. I am currently on the list of qualified consultants at the County of Mendocino Department of Planning and Building Services.

I have reviewed the Botanical Survey, Bower LLP Project- Gualala (APN 145-261-013 &005) for the prepared by BioConsultant LLC and dated August, 2007. The botanical survey report is missing some important information that is required for a scientifically sound botanical survey. A complete description of methodology and protocols was not included in the report. Given the fact that three wetland indicator species were found on the study site, there was a lack of discussion on how it was determined that wetlands did not exist. The survey should also have been conducted over a longer period of time during the growing season in order to identify all plants present on the project site. And most importantly, *Calystegia purpurata* ssp. *saxicola* was not reported to be present on or in close proximity to the study site. I have personally identified many individuals of this subspecies within close proximity to the study site and one individual on the study site that exhibits morphological traits that are intermediary between *C. purpurata* ssp. *purpurata* and *C. purpurata* ssp. *saxicola*.

**Timing of Survey**

According to the California Department of Fish and Game's Guidelines for Assessing the Effects of Proposed Developments on Rare, Threatened or Endangered Plants and Plant Communities, "rare, threatened or endangered plant surveys are to be conducted at the proper time of year when such plants are both evident and identifiable". This is usually when the plant is flowering, however proper identification of some plants also require fruiting bodies to be present.

Example: Appendix B lists *Fritilaria roderickii* (Roderick's fritilaria) as having potential to occur in the study area vicinity and that it's blooming period is from March through May. However, based on my direct experience with the only known population of Roderick's fritilaria in coastal Mendocino County, this species blooms in late March to early April. The blooms do not last long and can dry up beyond easy detection within a couple of weeks. After it blooms it is very difficult to find and

identify. Sometimes the plants will emerge in the early spring but will not bloom that year, making it equally difficult to find.

The study site was surveyed three times starting in May. This would have been too late for optimal conditions required for identification of this species.

This situation also illustrates the importance that botanical surveyors have a familiarity with the plants of the area that is being surveyed including rare, threatened and endangered species.

### **Wetland survey**

Three wetland species were listed in the botanical survey report. These species are *Oenanthе sarmentosa*, *Carex nudata* and *Potentilla anserina ssp. pacifica*. The Botanical Survey does not describe the type of wetland assessment conducted on the site. The botanical survey should have included information about the protocol followed to determine the absence of wetlands on the study site. Because of this lack of information, the possibility that these plants might in fact indicate the presence of wetlands on the site is left open.

Only qualified wetlands biologists should determine the presence of and delineate wetlands. A qualified wetlands biologist is one who has at minimum a bachelors degree in botany or closely related field such as biology and also has successfully completed a U.S. Army Corps of Engineers (ACOE) approved training course in wetland delineation in accordance with the currently approved methodology. Biologists who have not completed the training should be supervised by a qualified wetlands biologist when preparing wetland determinations and delineations.

### **Calystegia purpurata ssp. purpurata**

The botanical survey failed to document and report the presence of *Calystegia purpurata ssp. saxicola*, also known as the coastal bluff morning-glory. Samples of the *Calystegia* growing on the study site should have been sent to a botanist familiar with this genus to determine its identity. During a very cursory survey of the project site and close vicinity on November 18, 2007 I found what I believe to be one individual of this subspecies within the study site and numerous individuals south of the project site. I have attached photos of plants found on and near the site. These photos can also be compared to a color copy of a specimen (also attached) determined to be *Calystegia purpurata ssp. saxicola* by an expert in the morning-glory family.

It is reported in the Bower LLP Project - Botanical Survey report that *Calystegia. purpurata ssp. purpurata* (Climbing Morning-Glory) is present on the study site in appendix C (List of all Plants Documented within the Survey Limits).

The botanical survey report states that the “entire survey limits were walked” The report does not describe how potential habitat for *Calystegia purpurata ssp. saxicola* was surveyed in steep, seemingly inaccessible portions of the slope close enough to detect and distinguish individuals of the rare *ssp. saxicola* from *C. purpurata ssp. purpurata*. The lack of explanation of field survey methods in this terrain indicates a low level of reliability for a negative finding of this subspecies.

This subspecies belongs to a very complex and difficult genus and exhibits extreme morphological variability. It appears that morphological traits of *C. Purpurata ssp. purpurata* are sometimes found in *C. Purpurata ssp. saxicola*. Morphological traits of both subspecies can be evident in one individual.

I have determined *Calystegia purpurata ssp. saxicola* is on and nearby the study site based on my considerable experience with this subspecies’ vegetative characteristics. I compared the plants that

were found in their vegetative state on this study area with samples previously determined to be *Calystegia purpurata* ssp. *saxicola* by Dr. Brummitt of the Kew Botanic Gardens England, Frank Almeda (California Academy of Sciences, San Francisco), and Teresa Sholars (Biology instructor at College of the Redwoods in Fort Bragg and member of the California Native Plant Society's Rare Plant Scientific Advisory Committee). Please see attached photos and scanned, pressed plant specimens..

In 2004, I collected some specimens of the coastal bluff morning-glory during a survey I conducted on a property which is located approximately 1/2 mile north of the study site addressed in this report. Those specimens displayed a wide range of variability that did not closely fit the currently published description of this subspecies. I sent them to Dr. Brummitt who is an authority on the genus *Calystegia* and authored the treatment of this genus in the Jepson Manual. Dr. Brummitt determined them all to be *Calystegia purpurata* ssp. *saxicola* despite the variety of leaf shapes and other variable features exhibited by the collected specimens.

Clare Golec (California Department of Fish and Game botanist ) who had been out in the field to observe and collect *Calystegia* with Dr. Brummitt, stated that “*Dr. Brummitt saw problems with the key (which he authored in the Jepson Manual) but did not entertain the idea that the species could be taxonomically invalid. He further reminded us that subspecies commonly are variable and often exhibit traits of other subspecies (especially where ranges overlap) but one needs to look at the species as a whole...*”.

Ms. Golec added, “*[T]he important characteristics imparted by Dr. Brummitt are the predominant leaf shape of the plant (reniform to rounded...), habit (not strongly clambering and profuse), and geographic/habitat (Manchester Beach State Park to around Point Reyes along the immediate coastal habitats)...the bractlet lobing is not a reliable characteristic.*”

I have found plants that match the currently published description of the coastal bluff morning-glory (as well as the above descriptions by Dr. Brummitt) along the California coast as far north as Navarro Point (approximately 10 miles north of Manchester State Beach) and as far south as Jenner.

### **Conclusion**

I believe that another botanical survey should be completed. The botanical survey by Bioconsultant LLC was not conducted according to DFG guidelines nor was it done in a proper, scientifically sound manner. The new botanical survey should document map and report the presence and distribution of *Calystegia purpurata* ssp. *saxicola* on the study site and vicinity. Samples of the *Calystegia* growing on the study site should be sent to a botanist familiar with this subspecies to determine their identity.



Fig. 1 - *Calystegia purpurata* ssp. *saxicola* found on study site  
Showing flower and typical reniform to rounded leaf shape with closed sinus as well as some leaves with less rounded leaf tips, reminiscent of *C. Purpurata* ssp. *purpurata* (on the same plant).  
CDP #55-2006 Photo by Jon Thompson on November 18, 2007.



Fig. 2 - *Calystegia purpurata* ssp. *saxicola* found on study site  
Showing lobed bracts.  
CDP #55-2006 Photo by Jon Thompson November 18, 2007



Fig. 3 - General vicinity of *Calystegia purpurata* ssp. *saxicola* shown in above photo.  
CDP #55-2006 Photo by Jon Thompson November 18, 2007



Fig. 4 - *Calystegia purpurata* ssp. *saxicola* – vegetative – no flowers present. This specimen was found just south of the project site and has vegetative traits more closely resembling currently published descriptions of *C. purpurata* ssp. *saxicola*.  
CDP #55-2006 Photo by Jon Thompson November 18, 2007



Fig. 5 - General vicinity of *Calystegia purpurata* ssp. *saxicola* shown in above photo. South of study site.  
CDP #55-2006 Photo by Jon Thompson November 18, 2007

**California Academy of Sciences**

***Calystegia purpurata* (E. Greene) B. Brummitt  
ssp. *saxicola* (Eastw.) Brummitt**

Mendocino County, Calif. T11N, R15W, Sec. 20; Gualala Quad  
36951 Road 526, Gualala 1 mi. South of Anchor Bay, on the west  
side of Hwy. 1 Found throughout majority of lot.  
Considerable variation but appear to be same ssp.  
Flowers white w/ reddish tinges

June 2, 2002

Jon Thompson

Collection# 630



Photo Copy of Sample identified as *Calystegia purpurata* ssp. *saxicola*  
by Frank Almeda of the California Academy of Sciences, San Francisco, CA  
To be Compared with Photos of plants found on and in the close vicinity of the study site (CDP #55-2006)

Jon Thompson - comments on CDP #55-2006  
November 18, 2007

- 3' Tufted or twining herbs; ovary not lobed; style 1  
 4. Calyx > 7 mm; corolla gen > 3 cm; stigma lobes cylindrical or oblong, ± flattened ..... CALYSTEZIA  
 4' Calyx < 5 mm; corolla < 3 cm; stigma lobes cylindrical or thread-like, not flattened ..... CONVULVUS

CALYSTEZIA MORNING-GLORY

Richard K. Brummitt

Per, subshrub from caudex or rhizome, glabrous to tomentose. ST very short to high-climbing, gen twisting and twining. LF gen > 1 cm, linear to reniform, often sagittate to hastate, rarely deeply divided. INF: peduncle gen 1-flid; bractlets small and remote from calyx to large and concealing calyx, sometimes lobed. FL gen showy; corolla glabrous, white or yellow to pink or purple; ovary chamber 1 (septa gen incomplete), stigma lobes 2, gen swollen, cylindrical or oblong, ± flattened. FR ± spheric, ± inflated. SEEDS gen ± 4. ± 150 spp.; temp, worldwide. (Greek: concealing calyx, from bractlets of some) [Brummitt 1980 Kew Bull 35(2):327-328] Intergradation common; intermediate forms often difficult to identify. Appears similar to *Convolvulus*, but anatomy suggests that the 2 genera are not very closely related.

1. Bractlets attached > 1 mm below calyx and not concealing it, < 4 mm wide or variously toothed or lobed or lf-shaped
  2. Pl glabrous throughout
    3. Bractlets elliptic to widely elliptic-oblong, entire ..... *C. peirsonii*
    - 3' Bractlets linear, entire or with basal lobes
      4. St ± stiffly erect or intertwining; subshrub; lf linear to narrowly triangular, entire or lobes ± linear with 1 tip, sinus rounded ..... *C. longipes*
      - 4' St strongly climbing; vine; lf triangular to reniform, lobes wide, truncate or with 2 tips, sinus V-shaped or nearly closed ..... *C. purpurata*
      5. St climbing < 7 m; lf triangular, tip acute, sinus V-shaped, bractlets rarely lobed ..... ssp. *purpurata*
      - 5' St trailing or weakly climbing; lf ovate-triangular to reniform, tip gen rounded to notched, sinus almost closed; bractlets gen with small lobes ..... ssp. *saxicola*
  - 2' Pl puberulent to tomentose at least around lf sinus or at top of peduncle
    6. Bractlets entire, not lf-shaped, ± sessile ..... *C. occidentalis* ssp. *occidentalis*
    - 6' Bractlets toothed or lobed or lf-shaped, petioled
      7. Lf lobes 7-9, linear, finger-like ..... *C. stebbinsii*
      - 7' Lf ± entire or lobes 2, not linear nor finger-like
        8. Lf blade widely triangular to ± reniform, tip acute to acuminate, lobes 2-tipped; hairs ± shaggy ..... *C. malacophylla* ssp. *malacophylla*
        - 8' Lf blade gen narrowly triangular, tip ± acute, lobes 1-tipped; puberulent or hairs fine ..... *C. occidentalis* ssp. *fulcrata*
- 1' Bractlets attached just below calyx and ± concealing it, often > 4 mm wide, not lobed or lf-shaped
  9. Bractlets < 4 mm wide
    10. Pl densely hairy ..... *C. collina* ssp. *tridactylosa*
    - 10' Pl glabrous or minutely appressed-hairy
      11. Lf blade narrowly triangular, lobes 1/2 blade length, ± abruptly spreading and curved backward ... *C. peirsonii*
      - 11' Lf blade triangular-hastate to reniform
        12. Bractlets ± obtuse; pl glabrous ..... <sup>2</sup>*C. atriplicifolia* ssp. *buttensis*
        - 12' Bractlets acute; pl gen minutely appressed-hairy ..... <sup>2</sup>*C. subcaulis* ssp. *episcopalis*
  - 9' Bractlets > 4 mm wide
    13. Pl strongly climbing, st > 1 m
      14. Pl from rhizomes, st not woody; peduncle 1-flid; marshes, river banks ..... *C. sepium*
      15. Bractlets < sepals; corolla ± 40 mm ..... ssp. *binghamiae*
      - 15' Bractlets gen > sepals; corolla 35-70 mm ..... ssp. *limnophila*
      - 14' Pl from woody caudex, lower st often woody; peduncle often > 1-flid; gen dry places ..... *C. macrostegia*
      16. Bractlets 16-30 mm wide, strongly keeled to ± sac-like at base
        17. Bractlets 19-37 mm; calyx 16-25 mm; corolla 47-68 mm; stamens 23-35 mm; s Chl ..... ssp. *amplissima*
        - 17' Bractlets 13-26 mm; calyx 10-22 mm; corolla 36-60 mm; stamens 17-26 mm; n Chl ..... ssp. *macrostegia*
      - 16' Bractlets 4-16 mm wide, flat or slightly keeled
        18. Bractlets obtuse ..... ssp. *cyclostegia*
        - 18' Bractlets acute
          19. Lf densely short-hairy ..... ssp. *arida*
          - 19' Lf glabrous to puberulent
            20. Lf blade triangular, > 7 mm wide ..... ssp. *intermedia*
            - 20' Lf blade ± linear, < 7 mm wide ..... ssp. *tenuifolia*
    - 13' Pl not or only weakly climbing, st < 1 m
      21. Pl glabrous or sparsely appressed-puberulent; lf triangular-hastate to reniform
        22. Corolla deep pink or purplish; lf reniform, glabrous, slightly fleshy; ocean beaches, dunes ..... *C. soldanella*
        - 22' Corolla white or yellowish, rarely pink-tinged; lf various; inland
          23. Bractlets acute; pl gen minutely appressed-hairy ..... <sup>2</sup>*C. subcaulis* ssp. *episcopalis*
          - 23' Bractlets obtuse; pl glabrous ..... <sup>2</sup>*C. atriplicifolia* ssp. *buttensis*
      - 21' Pl with dense, spreading hairs or lf not triangular-hastate to reniform
        24. St well developed, < 100 cm, without basal rosette of lvs