

BARBARA RICE INTERN REPORT, 2022

Coast Redwood (*Sequoia sempervirens*) Alliance in Jedediah Smith Redwoods State Park



CALIFORNIA
NATIVE PLANT SOCIETY

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Sampling a costal Sitka spruce (*Picea Sitchensis*) Stand with Andrea Pickart, Renee Pasquinelli, and Peter Warner at the Mad River Vista Point in McKinleyville

5-Month's in Review

WHAT HAVE WE BEEN UP TO?

I started as the Barbara Rice intern with CNPS in July 2022. During the data collection months of July to November I participated in 67 surveys across three counties, including 40 surveys in which I was the primary data recorder. Surveys were conducted in 28 locations in 12 different ownerships, mostly on public land (see Maps Figures 1, 2, 3 and Table 1). I got the opportunity to work with 23 volunteers from three different CNPS chapters, the North Coast (NC), Dorothy King Young (DKY), and Sanhedrin chapters.

Many of the volunteers I worked with are local botanists and experts on the North Coast flora that enjoy sharing their knowledge. These volunteers have acted as mentors who have uplifted me, supported me, and taught me an immense amount over the past few months. I have gotten to sample in some of the most beautiful places in the world while learning about the vegetation there from experts.



In only my second week of the internship I participated in the 4-day sensitive plant community training and calibration with all 3 chapters. With the 36 participants we surveyed 12 plant communities ranging from coastal scrub, riparian forests, coastal prairie, dune forest, and dune mat to salt marsh flats (including vegetation types very similar to Sea Ranch).

Most of the surveying I did was with North Coast chapter members in Humboldt and Del Norte counties but twice I had the opportunity to visit Mendocino to sample with Teresa Sholars and her crew of volunteers from the Dorothy King Young chapter. Exploring Chamberlaine Creek in Jackson Demonstration State Forest and searching for California-nutmeg (*Torreya californica*) among old growth Coast redwoods (*Sequoia sempervirens*), Canyon Live Oaks (*Quercus chrysolepis*), and Tan Oaks (*Notholithocarpus densiflorus*) was truly one of my favorite moments.

Another highlight was surveying at Big Lagoon Fen. This unique North Coast peatland fen supports numerous plant (Over 103 species have been recorded there!) including 11 which are considered rare species in California. I really enjoyed seeing Bog clubmoss (*Lycopodiella inundata* CNPS rank 2B.2), Alpine marsh violet (*Viola palustris*, CNPS rank 2B.2), Round-leaved sundew (*Drosera rotundifolia*), and Buxbaum's sedge (*Carex buxbaumii*, CNPS rank S4.2). Plants only encountered in very few other places along the California coast.

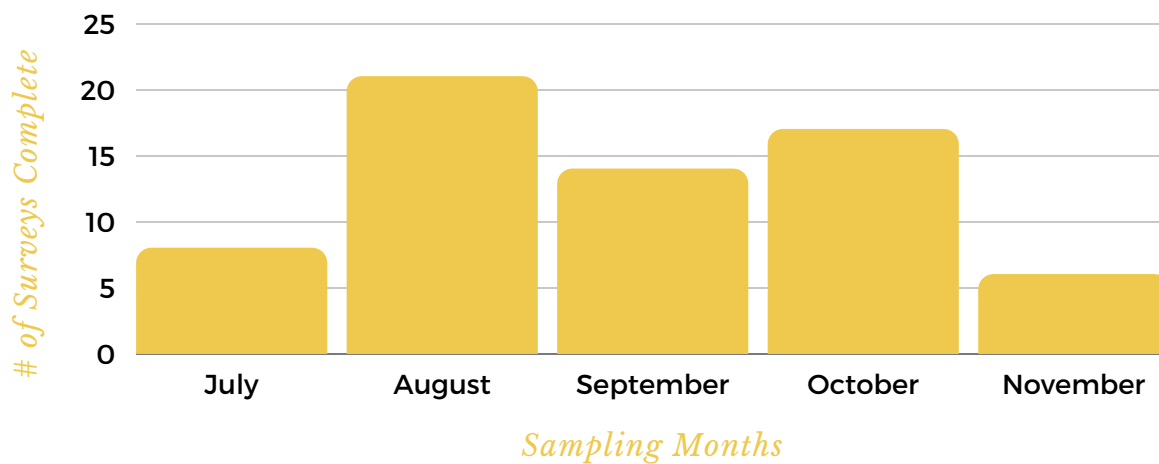


Lanphere Dunes

Chamberlaine Creek in Jackson Demonstration State Forest
(photo credit: Jim Gibson)

Big Lagoon Fen

In the 67 surveys I participated in, 51 Associations were identified within 34 different Alliances (see Table 1). Some of the surveyed vegetation types fit into the existing classification of California Vegetation, however, we surveyed 12 new types that still need to be described.

67*Surveys Completed***28***Locations***34***Alliances***51***Associations*

Many of these unique surveyed types have yet to be classified because the extent of the ranges for many of these vegetation types extend far north with only the southernmost edge of their range stretching down into the North Coast making many of them rare and sensitive in California. Others are endemic to California but have incredibly unique distribution patterns like the California-nutmeg (*Torreya californica*) where the range is fairly extensive, but localities are few in number and trees few in a given locality. We are hopeful to continue the hunt for unique, and sensitive communities like these in 2023 as vegetation sampling begins to extend down into Southern Humboldt and Mendocino.



Torreya californica fruit at Big River State Park

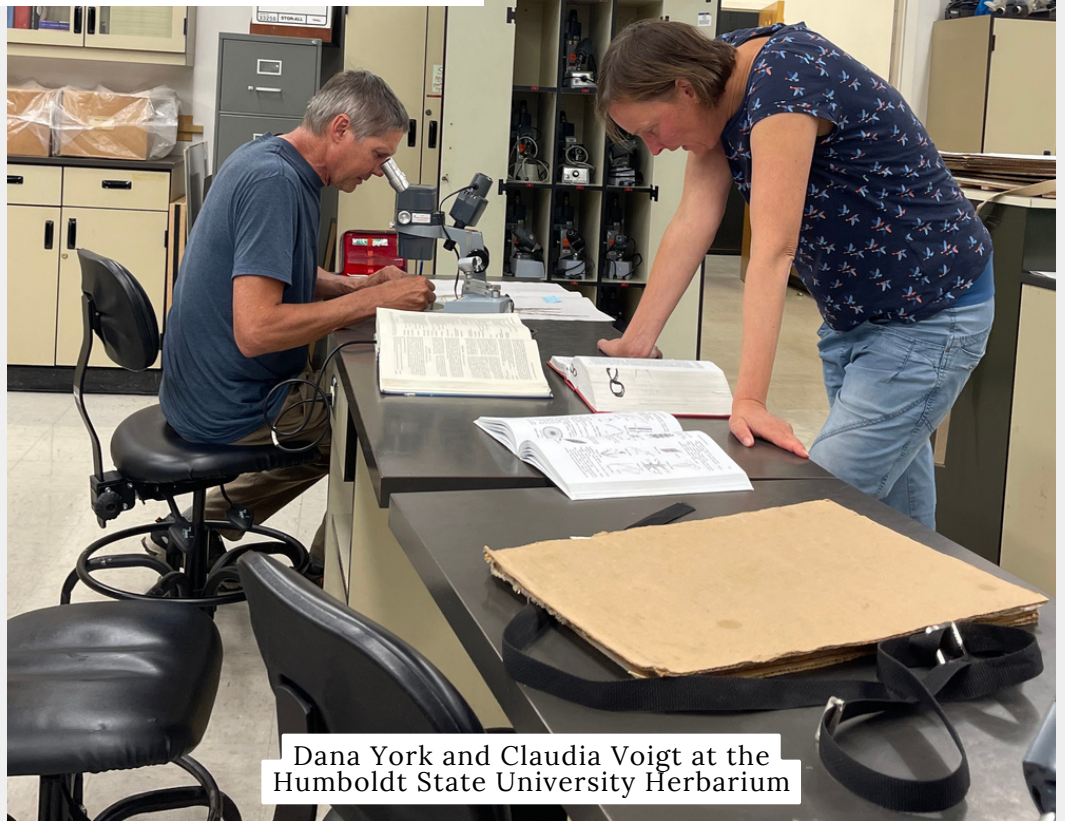


Castilleja ambigua at Lake Earl Wildlife Area

In some of the areas we sampled, few or no herbarium vouchers exist for a number of species. While sampling these different areas we searched for and collected plants to help fill these gaps in the herbariums collection.

I also worked with local botanist Dana York in the Herbarium to key unknown plants that were collected from various locations along the North Coast.

In total I collected and pressed 5 of the 15 specimens for the Cal Poly Humboldt Herbarium and helped Teresa with collecting one of the 11 specimen she submitted to the Mendocino College Coast Center Herbaria.



Dana York and Claudia Voigt at the Humboldt State University Herbarium

After finishing up data collection, I participated in a short but intense period of QA/ QC for all 745 surveys collected during 2022 in the North Coast ecoregion.

During my time with CNPS I have created 4 social media posts highlighting the vegetation work done with volunteers along the North Coast.

A report about the 4-day sensitive plant community training and calibration was published on the CNPS [Instagram](#), [Facebook](#), the [DKY Sponsored Projects Website](#), the Dorothy King Young Chapter's newsletter, and [Dorothy King Young Chapter's newsletter](#), and in the [North Coast chapter newsletter](#).

The DKY chapter also published a post about my internship "[Sara Bandali is the new Barbara Rice CNPS Intern!](#)" in their newsletter and an introductory post about myself that I wrote on their [Barbara Rice Intern page](#).

Two posts were created about the amazing sampling locations visited in 2022 including a post about Humboldt Lagoons State Park's Dry Lagoon (see picture to right) which was published on [Instagram](#), [Facebook](#), and [Twitter](#). A post about Big Lagoon Fen. (see picture on Pg.2) was published on [Instagram](#), [Facebook](#), and [Twitter](#).



Instagram post about the Sensitive natural community training in July (click to view)



318 likes



Claudia Voigt and Ashley Dickinson crawling through the dense understory of Dry Lagoons in search of rare species



971 likes

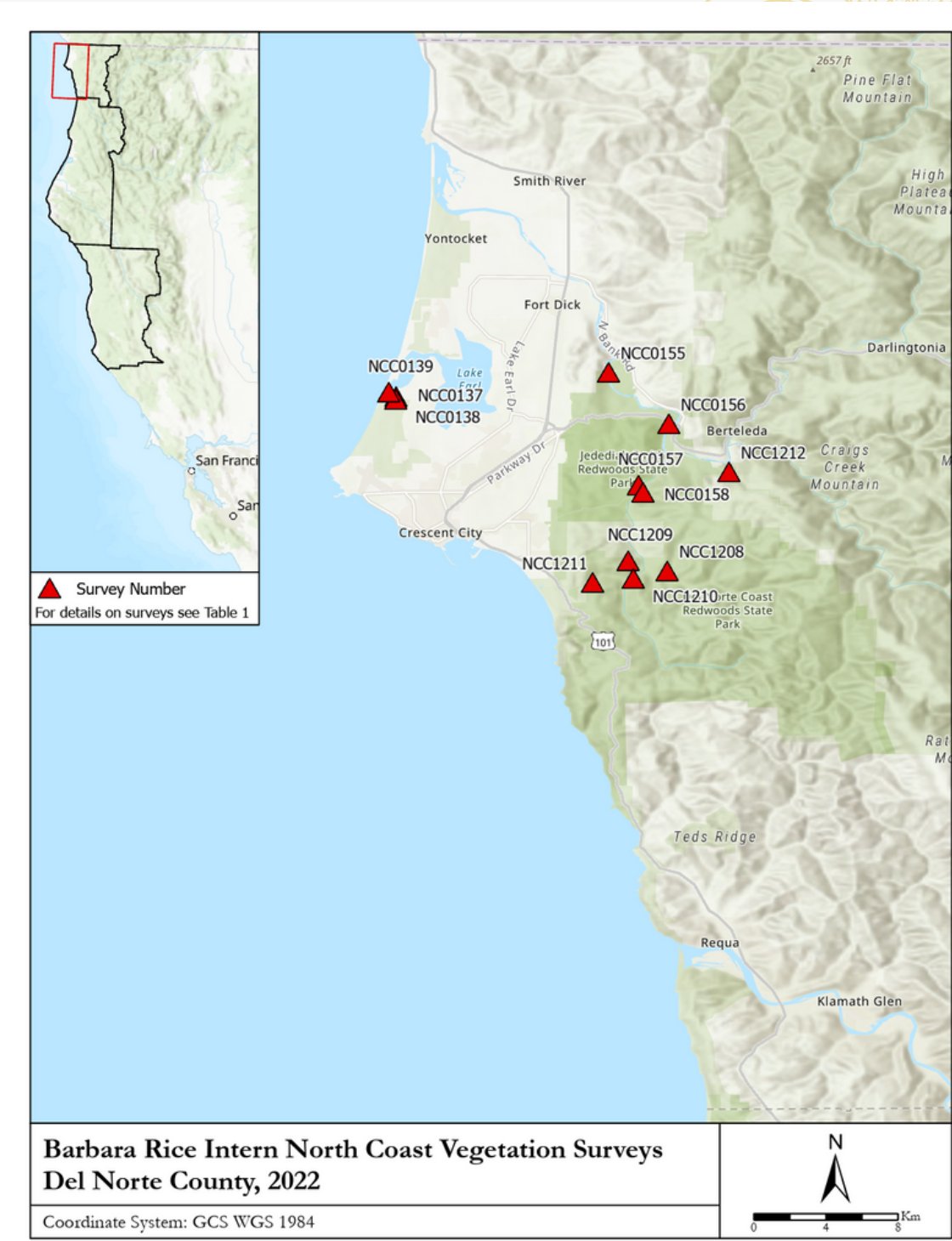


Figure 1.

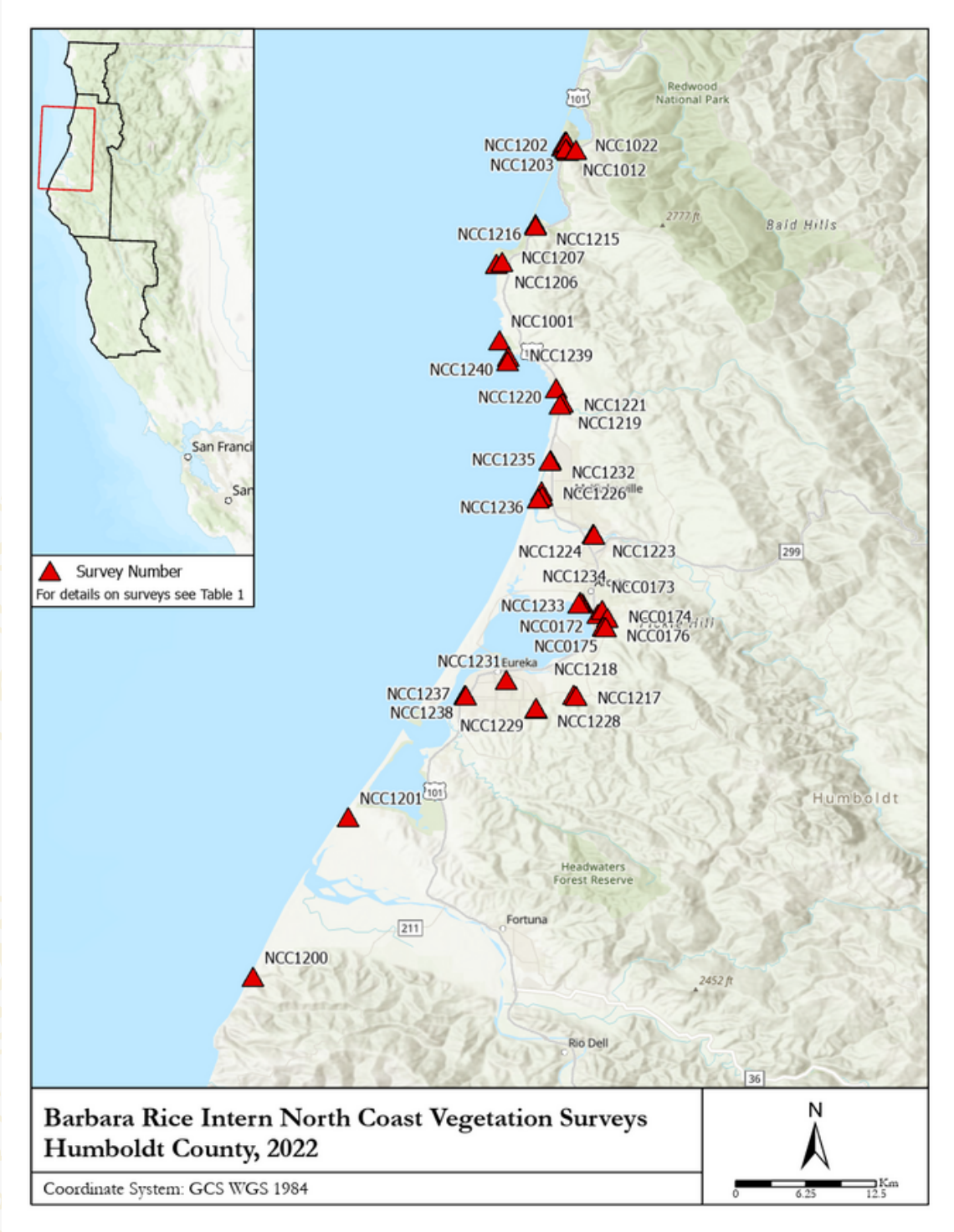


Figure 2.

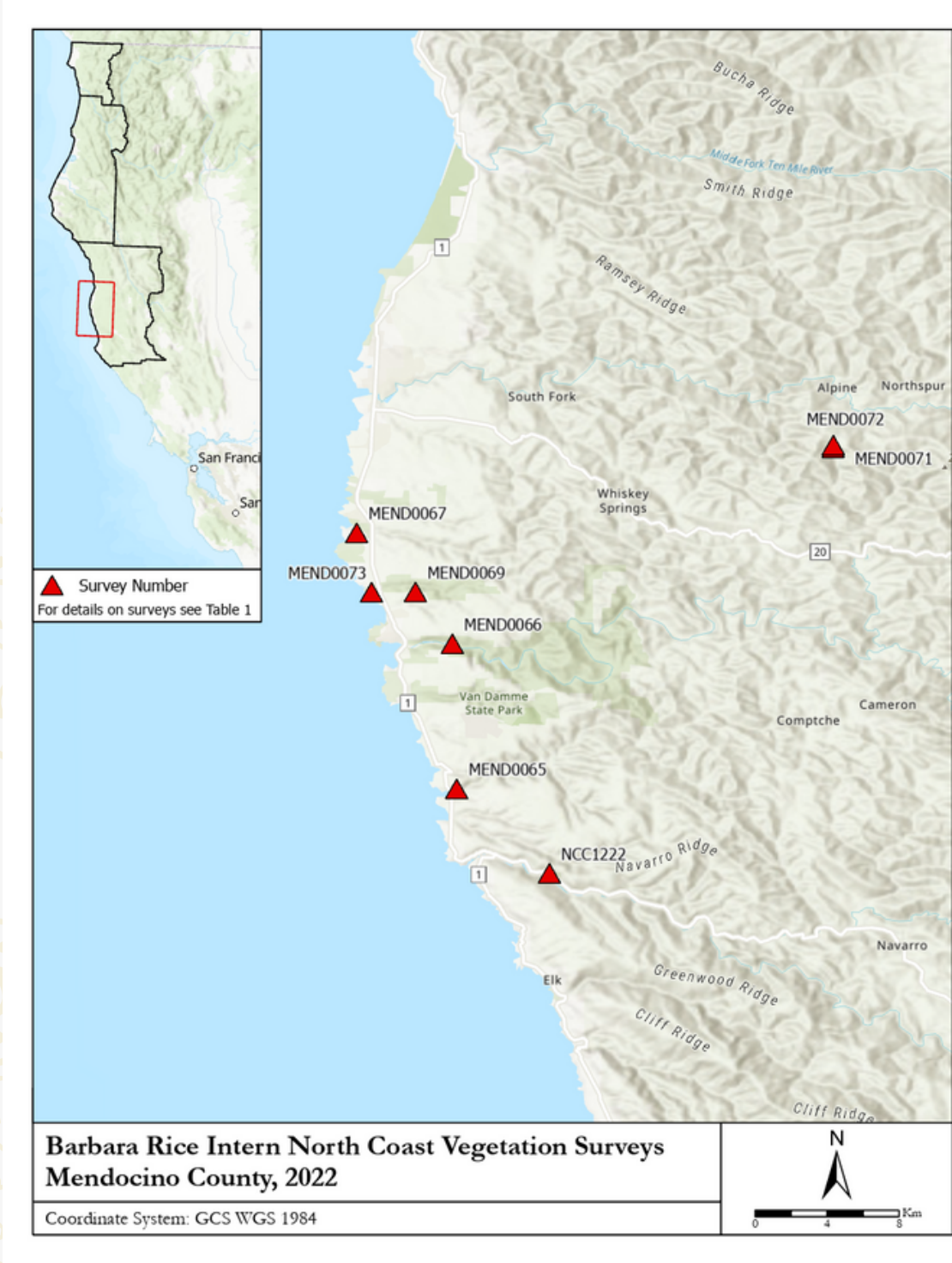


Figure 3.

County	Date	Plot Number	Owenship/ Location	Alliance	Association/ Type	Sensitive ranking
Del Norte	8/17/2022	NCC1209	California State Parks - Del Norte Coast Redwoods	Sequoia sempervirens	Sequoia sempervirens - Tsuga heterophylla / Polystichum munitum	S3
Del Norte	8/17/2022	NCC1210	California State Parks - Del Norte Coast Redwoods	Cynosurus echinatus - Arrhenatherum elatius	Cynosurus echinatus - Arrhenatherum elatius alliance (assoc undetermined)	-
Del Norte	8/17/2022	NCC1211	California State Parks - Del Norte Coast Redwoods	Pseudotsuga menziesii	Pseudotsuga menziesii - Umbellularia californica / Polystichum munitum	S4
Del Norte	8/17/2022	NCC1208	California State Parks - Del Norte Coast Redwoods	Alnus rubra	Alnus rubra / Rubus spectabilis - Sambucus racemosa	S4
Del Norte	8/16/2022	NCC0155	California State Parks - Jedediah Smith Redwoods	Alnus rubra	Alnus rubra / Rubus spectabilis - Sambucus racemosa	S4
Del Norte	8/16/2022	NCC0156	California State Parks - Jedediah Smith Redwoods	Sequoia sempervirens	Sequoia sempervirens - Tsuga heterophylla / Polystichum munitum	S3
Del Norte	8/16/2022	NCC0157	California State Parks - Jedediah Smith Redwoods	Sequoia sempervirens	Sequoia sempervirens / Polystichum munitum	S3
Del Norte	8/16/2022	NCC0158	California State Parks - Jedediah Smith Redwoods	Acer macrophyllum	Acer macrophyllum alliance (assoc undetermined)	S3
Del Norte	8/18/2022	NCC1212	California State Parks - Jedediah Smith Redwoods	Arctostaphylos columbiana [pending]	Arctostaphylos columbiana [pending] alliance (assoc undetermined)	-
Del Norte	8/11/2022	NCC0137	California State Parks -Tolowa Dunes	Carex obnupta - Oenanthe sarmentosa - Scirpus microcarpus	Carex obnupta - Argentina egedii	S3
Del Norte	8/11/2022	NCC0138	California State Parks -Tolowa Dunes	Salix hookeriana - Salix sitchensis - Spiraea douglasii	Salix hookeriana - Salix sitchensis - Spiraea douglasii alliance (assoc undetermined)	S3
Del Norte	8/11/2022	NCC0139	California State Parks -Tolowa Dunes	Distichlis spicata	Distichlis spicata - Atriplex triangularis	S4
Humboldt	7/22/2022	NCC1200	BLM - Lost Coast Headlands, Fleener Creek	Holcus lanatus - Anthoxanthum odoratum	Holcus lanatus	-
Humboldt	8/12/2022	NCC1011	California State Parks - Humboldt Lagoons State Park, Dry Lagoon	Alnus rubra	Alnus rubra / Rubus spectabilis - Sambucus racemosa	S4
Humboldt	8/12/2022	NCC1012	California State Parks - Humboldt Lagoons State Park, Dry Lagoon	Salix lucida ssp. lasiandra	Salix lucida ssp. lasiandra	S3.2
Humboldt	9/16/2022	NCC1021	California State Parks - Humboldt Lagoons State Park, Dry Lagoon	Carex exsiccata [new type]	Carex exsiccata [new type]	-
Humboldt	9/16/2022	NCC1022	California State Parks - Humboldt Lagoons State Park, Dry Lagoon	Carex obnupta - Oenanthe sarmentosa - Scirpus microcarpus	Carex obnupta	S3
Humboldt	7/23/2022	NCC1202	California State Parks - Humboldt Lagoons State Park, Dry Lagoon	Abronia latifolia - ambrosia chamissonis	Abronia latifolia - Calystegia soldanella - Lathyrus littoralis	S3
Humboldt	7/23/2022	NCC1203	California State Parks - Humboldt Lagoons State Park, Dry Lagoon	Rubus spectabilis - Morella californica	Morella californica - Rubus spp.	S3
Humboldt	7/23/2022	NCC1204	California State Parks - Humboldt Lagoons State Park, Dry Lagoon	Gaultheria shallon-Rubus (ursinus)	Rubus ursinus	S4
Humboldt	7/23/2022	NCCREC1200	California State Parks - Humboldt Lagoons State Park, Dry Lagoon	Baccharis pilularis	Baccharis pilularis - Ceanothus thyrsiflorus	S5
Humboldt	10/3/2022	NCC1221	California State Parks - Little River	Picea sitchensis	Picea sitchensis / Polystichum munitum	S2
Humboldt	10/3/2022	NCC1219	California State Parks - Little River State Beach	Baccharis pilularis	Baccharis pilularis / Ammophila arenaria	S5
Humboldt	8/3/2022	NCC1207	California State Parks - Sue-Meg	Alnus rubra	Alnus rubra / Rubus spectabilis - Sambucus racemosa	S4
Humboldt	8/3/2022	NCC1206	California State Parks - Sue-Meg	Pinus muricata - Pinus radiata	Pinus muricata	S3.2
Humboldt	7/21/2022	NCC1001	California State Parks -Trinidad State Beach, Megwil Point	Gaultheria shallon-Rubus (ursinus)	Gaultheria shallon - Vaccinium ovatum / Pteridium aquilinum	S4
Humboldt	7/21/2022	NCC1003	California State Parks -Trinidad State Beach, Megwil Point	Eriophyllum staechadifolium - Erigeron glaucus - Eriogonum latifolium	Erigeron glaucus - Fragaria chiloensis	S3
Humboldt	7/22/2022	NCC1201	CDFW Ocean Ranch	Carex obnupta - Oenanthe sarmentosa - Scirpus microcarpus	Juncus lescurii	S3
Humboldt	9/30/2022	NCC1233	City of Arcata - Arcata Marsh	Hydrocotyle (ranunculoides, umbellata)	Hydrocotyle ranunculoides	S3
Humboldt	9/30/2022	NCC1234	City of Arcata - Arcata Marsh	Lemna (minor) and Relatives	Lemna (minor)	S4
Humboldt	8/23/2022	NCC1500	City of Arcata - Arcata Marsh	Distichlis spicata	Distichlis spicata - Sarcocornia pacifica	S4
Humboldt	8/25/2022	NCC1501	City of Arcata - Arcata Marsh	Deschampsia cespitosa - Festuca rubra Brackish Salt Marsh	Deschampsia cespitosa - (Distichlis spicata)	S2

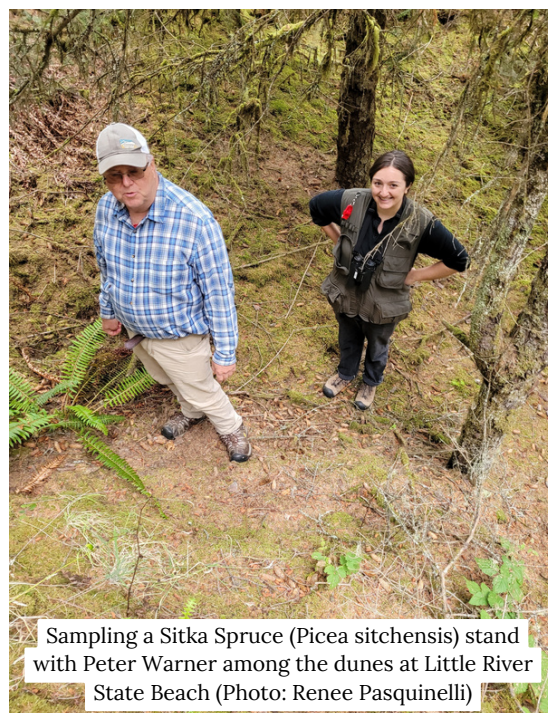
Humboldt	9/29/2022	NCC0172	City of Arcata - Jacoby Creek/Gannon Slough	<i>Distichlis spicata</i>	<i>Distichlis spicata</i> - <i>Atriplex triangularis</i>	S4
Humboldt	9/29/2022	NCC0173	City of Arcata - Jacoby Creek/Gannon Slough	<i>Juncus</i> (effusus, patens) - <i>Carex</i> (pansa, praegracilis)	<i>Juncus effusus</i>	S3S4
Humboldt	9/29/2022	NCC0175	City of Arcata - Jacoby Creek/Gannon Slough	<i>Typha</i> (angustifolia, domingensis, latifolia)	<i>Typha</i> (latifolia, angustifolia)	S5
Humboldt	9/29/2022	NCC0176	City of Arcata - Jacoby Creek/Gannon Slough	<i>Lolium perenne</i>	<i>Lolium perenne</i> - <i>Festuca arundinacea</i>	-
Humboldt	9/29/2022	NCC0174	City of Arcata - Jacoby Creek/Gannon Slough	<i>Eleocharis macrostachya</i>	<i>Eleocharis macrostachya</i>	S4
Humboldt	10/26/2022	NCC1231	City of Eureka - Coopers Gulch	<i>Salix hookeriana</i> - <i>Salix sitchensis</i> - <i>Spiraea douglasii</i>	<i>Salix sitchensis</i>	S3
Humboldt	11/3/2022	NCC1237	City of Eureka - Palco Marsh	<i>Carex obnupta</i> - <i>Oenanthe sarmentosa</i> - <i>Scirpus microcarpus</i>	<i>Juncus lescurii</i>	S3
Humboldt	11/3/2022	NCC1238	City of Eureka - Palco Marsh	<i>Salix hookeriana</i> - <i>Salix sitchensis</i> - <i>Spiraea douglasii</i>	<i>Salix hookeriana</i> / <i>Carex obnupta</i>	S3
Humboldt	11/8/2022	NCC1239	City of Trinidad - Trinidad Head	<i>Picea sitchensis</i>	<i>Picea sitchensis</i> / <i>Gaultheria shallon</i> [new type]	S2
Humboldt	11/8/2022	NCC1240	City of Trinidad - Trinidad Head	<i>Gaultheria shallon</i> - <i>Rubus</i> (ursinus)	<i>Rubus parviflorus</i>	S4
Humboldt	10/27/2022	NCC1232	Humboldt County - Mad River Vista Point	<i>Eucalyptus</i> spp. - <i>Ailanthus altissima</i> - <i>Robinia pseudoacacia</i>	<i>Eucalyptus</i> (globulus, camaldulensis)	-
Humboldt	11/3/2022	NCC1235	Humboldt County - Mad River Vista Point	<i>Picea sitchensis</i>	<i>Picea sitchensis</i> / <i>Polystichum munitum</i>	S2
Humboldt	10/26/2022	NCC1228	Humboldt County - McKay Community Forest	<i>Scirpus microcarpus</i>	<i>Scirpus microcarpus</i>	S2
Humboldt	10/26/2022	NCC1229	Humboldt County - McKay Community Forest	<i>Carex obnupta</i> - <i>Oenanthe sarmentosa</i> - <i>Scirpus microcarpus</i>	<i>Carex obnupta</i>	S3
Humboldt	10/26/2022	NCC1230	Humboldt County - McKay Community Forest	<i>Typha</i> (angustifolia, domingensis, latifolia)	<i>Typha</i> (latifolia, angustifolia)	S5
Humboldt	10/3/2022	NCC1220	Humboldt County - Moonstone Beach	<i>Baccharis pilularis</i>	<i>Garrya elliptica</i>	S5
Humboldt	8/29/2022	NCC1215	Humboldt County Park/ Big Lagoon Fen	<i>Myrica gale</i> - <i>Carex utriculata</i> - <i>Sphagnum</i> spp. Acidic Fen	<i>Spiraea douglasii</i> / <i>Sphagnum</i> spp. Fen Association	-
Humboldt	8/29/2022	NCC1216	Humboldt County Park/ Big Lagoon Fen	<i>Rubus spectabilis</i> - <i>Morella californica</i>	<i>Morella californica</i> - <i>Rubus</i> spp. - <i>Rhododendron columbianum</i> fen	S3
Humboldt	10/25/2022	NCC1227	McKinleyville Community Service District - Hiller Park	<i>Gaultheria shallon</i> - <i>Rubus</i> (ursinus)	<i>Rubus ursinus</i>	S4
Humboldt	10/25/2022	NCC1223	McKinleyville Community Service District - Riverfront Park, Mad River	<i>Carex nudata</i>	<i>Carex nudata</i>	S3
Humboldt	10/25/2022	NCC1224	McKinleyville Community Service District - Riverfront Park, Mad River	<i>Populus trichocarpa</i>	<i>Populus</i> spp. / <i>Salix</i> spp.	S3
Humboldt	10/25/2022	NCC1225	McKinleyville Land Trust - Mad River Bluff	<i>Pinus contorta</i> ssp. contorta	<i>Pinus contorta</i> ssp. contorta - <i>Picea sitchensis</i>	S3
Humboldt	10/25/2022	NCC1226	McKinleyville Land Trust - Mad River Bluff	<i>Picea sitchensis</i>	<i>Picea sitchensis</i> / <i>Polystichum munitum</i>	S2
Humboldt	11/3/2022	NCC1236	McKinleyville Land Trust - Mad River Bluff - South Stairs Overlook	<i>Salix hookeriana</i> - <i>Salix sitchensis</i> - <i>Spiraea douglasii</i>	<i>Salix hookeriana</i> / <i>Rubus ursinus</i>	S3
Humboldt	9/17/2022	NCC1217	NCRLT, Freshwater Farm	<i>Deschampsia cespitosa</i> - <i>Festuca rubra</i> Brackish Salt Marsh	<i>Deschampsia cespitosa</i> - (<i>Distichlis spicata</i>)	S2
Humboldt	9/17/2022	NCC1218	NCRLT, Freshwater Farm	<i>Carex lyngbyei</i>	<i>Carex lyngbyei</i>	S1
Mendocino	10/18/2022	NCC1222	California State Parks - Navarro River Redwoods	<i>Sequoia sempervirens</i>	<i>Sequoia sempervirens</i> - <i>Pseudotsuga menziesii</i> - <i>Umbellularia californica</i>	S3
Mendocino	9/1/2022	MEND0066	California State Parks -Big River	<i>Sequoia sempervirens</i>	<i>Sequoia sempervirens</i> - <i>Pseudotsuga menziesii</i> - <i>Notholithocarpus densiflorus</i>	S3
Mendocino	9/1/2022	MEND0067	California State Parks -Caspar State Beach	<i>Salix hookeriana</i> - <i>Salix sitchensis</i> - <i>Spiraea douglasii</i> [pending]	<i>Salix hookeriana</i> - <i>Salix sitchensis</i> - <i>Spiraea douglasii</i> [pending]	S3
Mendocino	10/17/2022	MEND0072	Jackson Demonstration State Forest	<i>Pseudotsuga menziesii</i> - <i>Notholithocarpus densiflorus</i>	<i>Pseudotsuga menziesii</i> - <i>Notholithocarpus densiflorus</i> - (<i>Quercus chrysolepis</i>) / <i>Vaccinium ovatum</i>	S3
Mendocino	10/17/2022	MEND0071	Jackson Demonstration State Forest	<i>Sequoia sempervirens</i>	<i>Sequoia sempervirens</i> - <i>Pseudotsuga menziesii</i> - <i>Notholithocarpus densiflorus</i>	S3
Mendocino	8/31/2022	MEND0065	Owner Gabriella Levine - Albion River	<i>Pinus muricata</i> - <i>Pinus radiata</i>	<i>Pinus muricata</i> - <i>Pseudotsuga menziesii</i>	S3.2
Mendocino	10/17/2022	MEND0070	Jackson Demonstration State Forest	<i>Pinus muricata</i> - <i>Pinus radiata</i>	<i>Pinus muricata</i> - <i>Chrysolepis chrysophylla</i> / <i>Arctostaphylos nummularia</i>	S3.3
Mendocino	10/18/2022	MEND0073	Russian Gulch State Park	<i>Pinus muricata</i> - <i>Pinus radiata</i>	<i>Pinus muricata</i>	S3.2
Mendocino	9/2/2022	MEND0069	Russian Gulch State Park	<i>Carex obnupta</i> - <i>Oenanthe sarmentosa</i> - <i>Scirpus microcarpus</i>	<i>Carex obnupta</i> - <i>Oenanthe sarmentosa</i> - <i>Scirpus microcarpus</i> alliance	S3



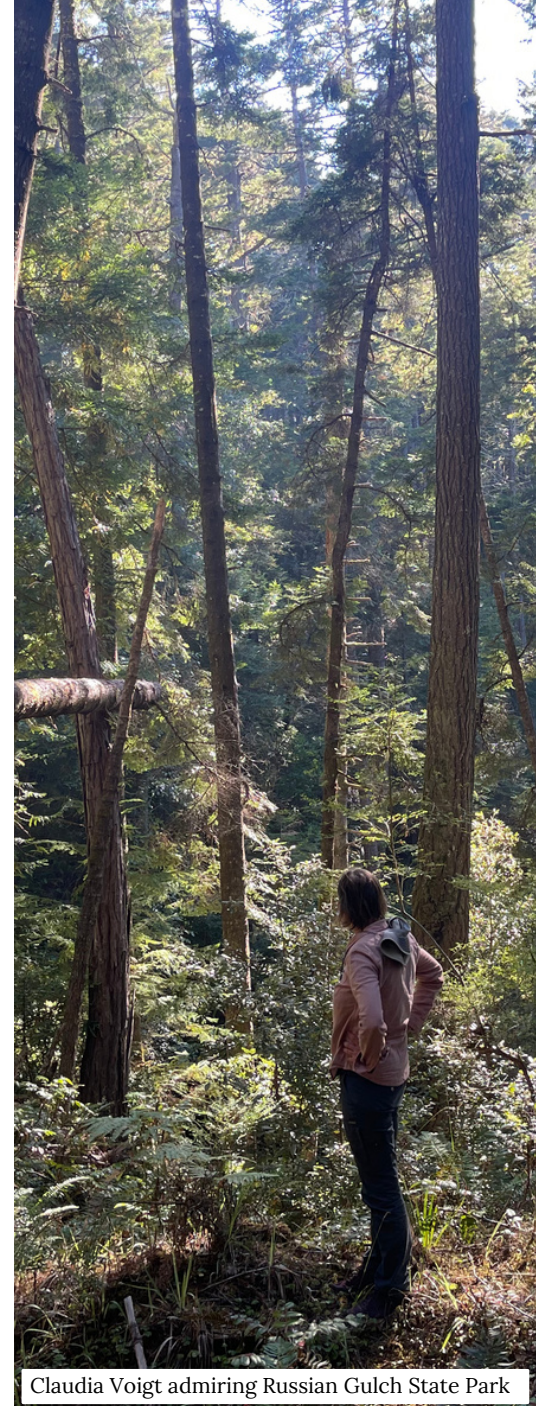
Working at the CNPS store booth during the Conference



Sampling aquatic vegetation at the Arcata Marsh and Wildlife Sanctuary with volunteers



Sampling a Sitka Spruce (*Picea sitchensis*) stand with Peter Warner among the dunes at Little River State Beach (Photo: Renee Pasquinelli)



Claudia Voigt admiring Russian Gulch State Park



CNPS Volunteer Lupine, listening to releve protocol at Megwil point, Trinidad



Big River State Park



Veratrum fimbriatum stand



Russian Gulch State Park



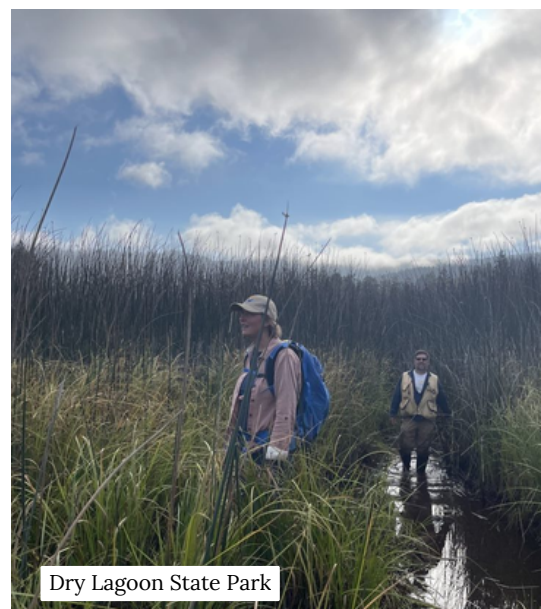
Russian Gulch State Park



Russian Gulch State Park



Chamberlaine Creek in Jackson Demonstration State Forest



Dry Lagoon State Park



Training participants observing the dune mat vegetation in Humboldt Lagoons State Park's Dry Lagoon



Teresa Sholars and Claudia Voigt admiring Russian Gulch State Park



Training and calibration at Trinidad State Beach



Training participants observing the different vegetation types at Trinidad State Beach



Training participants sampling a Crowberry (*Empetrum nigrum*) stand on a steep cliff face



Sampling old growth Coastal Redwoods (*Sequoia sempervirens*) at Grove of the Titans in Jedediah Smith Redwoods State Park



Training participants calibrating with their compasses at Trinidad State Beach



Freshwater Farms Reserve



fringed corn lily (*Veratrum fimbriatum*)



Trinidad Head



Looking for sensitive vegetation types along the
Lost Coast Headlands



Reviewing species cover numbers for a *Pinus muricata* stand in Jackson Demonstration State Forest



Big River State Park



Claudia Voigt and Ashley Dickinson crawling through a Pacific Willow (*Salix lasiandra*) stand in Humboldt Lagoons State Park Dry Lagoon



Botanical survey assistant Lupine Sholars resting in a Western Sword Fern (*Polystichum munitum*) bed



Claudia Voigt and Peter Warner discussing vegetation patterns at Humboldt Lagoons State Park



Jackson Demonstration State Forest



Russian Gulch State Park



Jackson Demonstration State Forest



Lost Coast Headlands



Russian Gulch State Park



Russian Gulch State Park