

Renante Edwards

Dan Close

**ENVS 410
Final Project**

**Edible Landscaping and Permaculture
Project at CCAT**

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**Problem Statement
Practicum**

ENVS 410

Dan Close and Renante Edwards

The problem that we will seek to rectify is complex and multi-layered, but can be described simply: There is a disconnection between most citizens of the “modern industrial world” and their food supply, especially in urban areas where the vast majority of the population lives. This is manifest in the lack of concern, economically and politically, for the systemic decline of the percentage of the population that farms, and the generally declining acreage of productive farmland, caused by nutrient depletion, toxicity, and salinity problems. Especially in California, there is a trend toward more conversion of farmland for residential or commercial use. This problem is thus physical/economic and ethical/spiritual in nature; there is a lack of appreciation, and a lack of political support for local and regional food independence, to the degree possible in a globalized food economy. While Humboldt County, and some “progressive” rural areas are experiencing a renaissance of sorts in “bio-regionalism” and localization (to the degree practical), there is still a lack of awareness about the value of both native edible foods and sustainable food production. Thus any solution would require a strong educational component, to first raise awareness and knowledge of food supply, both man-enhanced and “natural” (i.e. foraging). We will attempt to contribute a small, local solution to this immense problem, and explore solutions that could be implemented right here at HSU and Arcata.

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GOALS & OBJECTIVES

ENVS 410 Hansis

To address the problem of local food production (non-agricultural), and the disconnection between people and their food, we have the following general goals, and the related practical objectives:

GOALS:

- 1) To educate and promote awareness about small-scale food and/or medicine production, native and wild edibles, and permaculture, with an emphasis on functional landscape and site maximization in regards to the above.

Objective: To create an educational component to promote and educate HSU students, and community members, about the possibilities of onsite food production, small-scale permaculture, and connection to one's food supply. This could include informational signs and exhibits, literature, and a curriculum of workshops or events that would involve students in maintaining and benefiting from the site.

I don't see much difference solution

- 2) To supplement the nutrition and sustainable food supply (of beneficiaries) with the demonstration of stated principles, and provide limited production of food and/or medicine (herbs), and explore techniques to cultivate an "edible landscape" of especially native food plants.

Objective: To plant/propagate a small area of edible/medicinal landscaping, preferably native or non-invasive species, for a lasting demonstration of stated goals, to the degree possible, on the HSU campus. This includes determining the feasibility of various alternatives to addressing the stated problem.

Solution

Renante Edwards

Dan Close

Alternatives-- Weightings and Rankings

ENVS 410

Alternatives (Ranked)

1) Work on existing Native Landscaping at CCAT

Description: Help with transitional site-planning for CCAT’s onsite landscaping, which includes native and/or edible plants, fruit trees, and herbs, and improve upon currently under-utilized areas onsite for this purpose. Also create educational / interpretive displays and other creative means of educating visitors about the benefits and uses of the species. This could include curriculum or workshop programs.

Positive: The spirit and objectives of current CCAT activities are compatible, and overlap with stated objectives of proposed project. There is relative autonomy to design and implement, within the institutional support of CCAT, and CCAT welcomes and solicits input and effort to support their activities. This alternative would thus fulfill both objectives with high feasibility, and maximized benefit. Additionally, there is a respectable patronage for CCAT, and the project would have maximum efficacy in fulfilling the educational objective, while allowing for maximized fulfillment of the (planting/propagation) objective in a protected setting.

Negative: Not a novel, stand-alone project (not necessary to fulfill objectives), thus limited net gain in exposure and benefits relative to that of projects elsewhere on campus.

2) Create an Edible/Medicinal Landscape, or demonstrative garden (Native Plants and edibles) at an alternative site on campus

Description: Propose to install and maintain an edible and/or medicinal plant landscaping regime for at least one possible site on campus, not CCAT, where exotic invasive and other non-functional landscaping currently exists.

Positive: There are current and proposed activities of like nature at CCAT, and a dedicated but predictable patronage, demographically and socially, leading to the “preaching-to-the-choir” phenomenon. An alternative site would result in broader exposure and greater net efficacy, and would only compound and augment CCAT’s efforts while engaging a different segment of the student population, particularly those with limited previous exposure to plants and food supply issues. The educational objective would be fulfilled, and the production of useable results would depend on size and characteristics of specific site.

Negative: The regulatory process for on-campus projects of any type necessitate sending a proposal to Mr. Doug Kokesh, who is responsible for reviewing and deciding on such proposals. After review of current proposal, Mr. Kokesh declined to authorize the project as proposed, stating that it does not “fit in to the master plan”, and only a limited number of projects could be authorized every period (semester, but also

cumulatively). The possibilities for a similar project at any given location are thus diminished, pending subsequent proposals submitted for review by Doug Kokesh. However, a stronger, more specific proposal could render this alternative much more feasible.

3) Plant edible/native plants at proposed memorial garden for deceased HSU student

Description: Plant native edible plants or herbs as part of a student-planned memorial garden for a deceased HSU student, to be constructed near the Dormitories. The additional goal, per said objective, would be to use native, functional (and attractive) plant species for this garden, as a secondary benefit of the memorial. This would only consist of a small, "low-key" interpretive component so as not to overpower the original intent of the memorial.

Positive: No additional authorization would be required pending the existing project proposal, and this would be a "low-impact", multi-use oriented installation of an already worthy and commendable project. This could promote the use of functional plant species at various future projects onsite, such as the various renovations upgrades already established in the Master Plan, with the intent of maximizing sites and resources for full educational and functional value.

Negative: There intent is not to co-opt or override an existing beneficial project, rather to suggest potential additions, or minimal changes to existing plans by utilizing certain beneficial species of plants. However, the group does not intend to intrude or negatively alter the goal and/or objective of the original project. Thus, this alternative can only be viewed as supplemental implementation, and does not fulfill either objective satisfactorily. The site would be of limited capacity and emphasis on the education objective would be perceived, understandably, as disrespectful to the original purpose.

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ENVS 410

IMPLEMENTATION STRATEGY

* Design Site Plan for CCAT site; submit to CCAT site employees at weekly meeting

When: Thursday, 4/12

Description: Dan and Renante will attend the CCAT meeting for site staff, to collaborate and receive feedback on initial plans and ideas, for the purpose of refining the specific design for the site.

* Work at CCAT site to prepare site for restoration; remove non-native and other invasive and/or undesired plants and do other initial preparations on the site

When: Friday, 4/13 various dates to be determined

Description: The site currently has several native species planted, but much of the site is relatively neglected, with numerous “weeds” and undesired species distributed throughout existing landscaping and groundcover.

* Solicit Donations and Input from selected local nurseries and restoration groups, including Freshwater Farms, to obtain additional specimens of native, edible (or medicinal) plants to be propagated onsite at CCAT. Dan will contact Freshwater Farms, Six Rivers Restoration, and others, and Renante will talk to local native plant and permaculture experts, with a preference for more rare or threatened species, and/or a creative permaculture strategy for a portion of the site

When: By Friday, 4/20 To be implemented before or during the week of 4/23

Description: CCAT currently has several native species planted of onsite, but is in need of various species to expand and diversify the inventory. We would like to obtain specifically more rare and/or threatened species, if applicable, but the emphasis is on functionality and doing what hasn't already been done onsite, to enhance the diversity and function of the future landscape.

* Work at CCAT to prepare site for planting and design; additional invasive plant removal and necessary improvements

When: Thursday, 4/19 and Friday, 4/20

Thursday, 4/26 and Friday, 4/27

Description: Same as above, as Sarah Dykeman has stated, “weeding” is a “full-time job” at CCAT, in preparation for enhancement of site.

* Dan will speak with Mr. Doug Kokesh about possibly removing some trees (non-native Monterey Pines) onsite, to provide space and sunlight exposure for native plants and permaculture setup

When: Friday 4/20 or Friday 4/27

* Implement and Install available materials; plant as available, exact actions onsite to be determined, pending collaboration and approval with CCAT site staff. Actions will be determined as consistent with CCAT’s overall goals and objectives for the site and surrounding areas.

When: To be modified Thursday, 4/26 and Thursday, 5/3

** Renante: Travel to CSUS to examine site and receive feedback, info. Dan: continue work onsite, with student volunteer labor.

Permaculture Design, Draft Site Plans, Formal Objectives, pending review of input by Mr. Derrington and CSUS field visit. May 5 – May 31.

Monitoring & Evaluation

We are successful if we prepare the small focus area with several species (huckleberry, grape, ginger, etc.), and plan for future development of site, with emphasis on unique and novel permaculture approach, modeled in part after what has been accomplished elsewhere and onsite.

What: We will monitor the status and health of the focus area landscape, particularly for soil moisture and plant health. This will be monitored physically by Dan Close and/or CCAT staff. As needed, additional organic matter will be added over existing soil and root system.

- CCAT staff will implement approved plans on remainder of site post-construction activity.
- Possible help of additional staff and resources during summer 2007, pending grant funding.

When: Site status will be monitored again, and continuously between, late summer (August-September 2007) by Dan and CCAT staff to assess progress and potential problems (drainage issues, invasive species, etc.)

The Results and findings encountered will be communicated via email and in person, to CCAT staff, Sarah Dykeman in particular, and between Dan and Renante frequently. Additional communications necessary, i.e. Doug Kokesh, grounds staff, will occur via email, and additional collaborations will occur in fall, when regular activities resume.

--Updated info will be uploaded to the CCAT website, as available.

EVALUATION

See if plants survive

We should have x species and specimens of plants, feasible site plans, and work staff and schedule implemented.

What needs to be done: Full implementation, with much of site yet to be prepared, will necessarily wait until facilities are relocated through site.

- More site terracing and engineering of slope will occur. This necessitates a labor force, or CCAT paid staff in summer and fall 2007.

We could have: Organized a work party more efficiently to prepare site and remove all invasive or non-desirable plants. Complete Focus Area propagation, pending new permaculture and landscaping plans.

Met with Steve Derrington and other expert resources more frequently, and gained skills and tools quickly to implement and move forward with optimal plans.

Monitoring will occur and changes and/or adaptations will be made as necessary.

Carrie,

Thank you for your proposed project submittal. After careful review of the merits of your proposal and, in an effort to balance the needs of the university landscape, I must regretfully decline your ambitious and commendable intentions. While I have approved a select few student project proposals for this year, I do not believe I can successfully integrate such a project into the university's long range landscape master plan.

Again, my sincere thanks for the time, effort and creativity. I wish you great success in your academic endeavors here at HSU.

If I can be of any further assistance, please call me at (707) 826-5894.

Sincerely,

Doug Kokesh,
Manager of Grounds and Landscape Services
Humboldt State University - Plant Operations
1 Harpst Street
Arcata, CA 95521-8299

-----Original Message-----

From: Carrie B. Alexander [mailto:cba7@humboldt.edu]
Sent: Thursday, February 08, 2007 6:07 PM
To: dbk7@humboldt.edu
Subject: Edible Landscape proposal

Hello Doug Kokesh,
I spoke with you a few weeks ago regarding a location for an edible landscape on campus, you told me to submit a written proposal. Here it is. If you have any questions please email us.
Thank you,
Carrie Alexander
cba7@humboldt.edu

Edible and Medicinal Plant Landscape

To: Sarah Dykeman

Re: CCAT site

As part of our ENVS 410 capstone project, we propose to design and implement a functional, edible and/or medicinal landscape, consisting of low-maintenance, native (preferably) vegetation, such as orchards, shrubs and native berries. This will provide 2 primary functions: 1) to promote awareness and understanding about edible plants,

permaculture ideas, and natural herbs

2) to augment the food and/or medicine supply for a small scale residency, i.e. the residents of CCAT

We engaged Freshwater Farms to donate some plants or cuttings, and we envision native plants such as berries, but also fruit trees, and possibly edible mushrooms or other ideas.

Also, the educational / interpretive component is important. We would install interpretive and informational signs and material onsite, and possibly design a sort of curriculum to hold workshops in the site.

Sincerely,

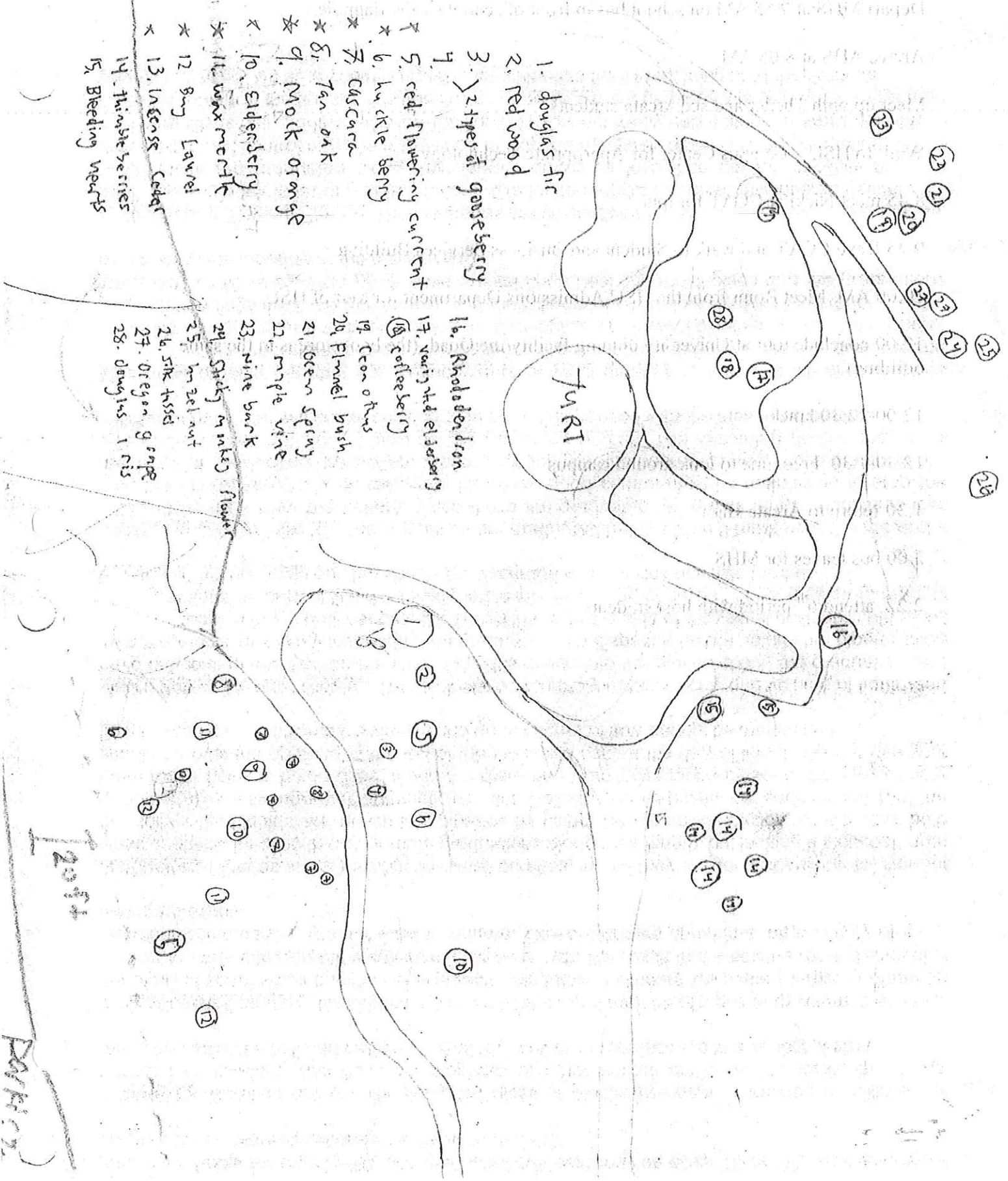
Dan Close

and

Renante Edwards

- 1. douglas fir
- 2. red wood
- 3. > 2 types of gooseberry
- 4.
- 5. red flowering currant
- * 6. huckle berry
- * 7. Cascara
- * 8. Tan oak
- * 9. Mock orange
- x 10. Elderberry
- * 11. Wax myrtle
- * 12. Bay Laurel
- x 13. Inense Cedar
- 14. Thimble berries
- 15. Bleeding hearts

- 16. Rhododendron
- 17. variegated elderberry
- 18. coffeeberry
- 19. Cotton thorn
- 20. Flannel bush
- 21. Green spiny
- 22. maple vine
- 23. wine bark
- 24. Sticky minked flower
- 25. hazel nut
- 26. silk tassel
- 27. Oregon grape
- 28. douglas iris



Dense forest / Shade

- Sword fern
- Lady fern
- False lily of the valley
(Maianthemum dilatata)
- Red & evergreen huckleberry
- Oxalis

Other

- Mimulus guttatus } full sun
- Lupinus trivularis }
- Candyflower

* Park lot border

- Ceanothus sp.
- ~~W~~ Silk tassel (Garrya elliptica)
- Coffeeterry (Rhamnus californica)
- * Western Azalea (Rhododendron occidentale)
- * Hazel nut

Shrubs/Trees

- 1) ~~Boxwood - native alternative to Holly (Heteromeles arbutifolia)~~
- 2) Red Elderberry (Red) (*Sambucus racemosa*)
- 3) ~~CA Hazelnut~~
- 4) Gooseberry (*Ribes menziesii* or other sp.)
- 5) ~~Mock Orange (*Philadelphus lewisii*)~~
- 6) ~~Cascara (*Rhamnus purshiana*)~~
- 7) Salmonberry (*Rubus spectabilis*)
- 8) ~~Salix scouleri (Willow)~~
- 9) Swinberry (*Lonicera involucrata*)

Vines

- Wild cucumber (*Mariola oregana*)
- Wild grape (*Vitis californica*) - vigorous

Rock garden

Sedum sp. *sp. thulifolium* (Zonopsis)

Bulbs

CA Fuchsia (*Epilobium canum* or *Bauhinia californicum*)

Meadowfoam

Wildflowers (Gilia, Blue Eye, CA)

Sea Thrift (poppy) (*Armeria maritima*)

Judaea (a succulent)

CA Aster

ed.

Cyan - red berries
Claytonia perfoliata miner's lettuce' edible greens
C. sibirica candyflower

You have

Fringepops
Fremont daisy
~~Astachys~~ ~~sp.~~ jugensis hedge nettle
Gold dust discolor oceanspray
Coyote brush Baccharis
figwort Scrophularia californica
hazelnut Corylus cornuta
ninebark Physocarpus
bracken - rhizome
Berberis (not nervosa) aquilinum??
Mimulus aurantiacus
silktassel Comya elliptica

Douglas iris
strawberry -
Elderberry ornamental
Sword fern
coffee berry Rhamnus (Fragula)
Ribes sanguineum
Penstemon heterophyllum
Geum macrophyllum
Potentilla anserina silverweed
Yarrow Achillea
Sedum maybe native
Ribes divaricata + menziesii
Spiraea douglasii
Vancouveria hexandra
Huckleberry blk + red
Sedal
Deer fern
Lady fern

Bad

Oxalis
Bamboo
Crocus (Montbretia)
Himalaya blackberry
Japanese honeysuckle
Buddleia
Lamium ornamental
Periwinkle

Viola sempervirens
Coccoloba
Pinus
Tanoak?
Mock orange Philadelphus
Wax myrtle
Lonicera hispidula
Calif. key Umbellularia
Thimbleberry
M. F. native bractea
Scolopos bigelovii =
fetid abcess tongue
shrub pod
chain fern
w. hemlock

Native Plant Landscaping in Coastal Humboldt County

By Eddie Tanner (Fall 2003)

Growing native plants will beautify your yard, and save you work. Because they are acclimated to our climate and soils, native plants are able to thrive without irrigation or fertilization. Many of them require little pruning, and all of them provide food and habitat for local birds and insects. The following is only a sample of the species native to coastal Humboldt County. The listed spacing distances are recommended minimum spacing. As trees and tall shrubs grow, it may be possible to plant herbs and short shrubs beneath them. Planting in winter is ideal for all woody plants; early fall for herbaceous perennials. Plants may need irrigation the first year, and mulching/weeding the first few years. Try not to mix water-needing plants with non-irrigated plantings. Shredded bark, conifer needles, and even wood shavings make excellent mulch when applied in thick layers. Contact Freshwater Farms or Six Rivers Restoration for lists of available native plant nursery stock.

Trees

- Big Leaf Maple (*Acer macrophyllum*) - medium tall tree, deciduous, fast growth, spreading branches moist/shady places.
- Coast Redwood (*Sequoia sempervirens*) - tall tree, evergreen, moderately fast growth, do not top.
- Incense Cedar (*Calocedrus decurrens*) - tall tree, evergreen, slow growth.
- Port Orford Cedar (*Chamaecyparis lawsoniana*) - tall tree, evergreen, slow growth.
- Red Alder (*Alnus rubra*) - medium tree, deciduous, fast growing.
- Sitka Spruce (*Picea sitchensis*) - tall tree, evergreen, moderate growth.
- Western Hemlock (*Tsuga heterophylla*) - medium tree, evergreen, slow growth.
- Western Red Cedar (*Thuja plicata*) - tall tree, evergreen, moderate growth.
- Willow (*Salix* spp.) - short tree, deciduous, fast growth - good for wind-blocks & visual screens.
- Vine Maple (*Acer circinatum*) - Small tree (shrub-like), deciduous, moderate growth, beautiful foliage.

Shrubs

- Bearberry (*Arctostaphylos uva-ursi*) - evergreen, slow growing, groundcover, full sun/partial shade, 5' spacing.
- Blueblossom (*Ceanothus thyrsiflorus*) - evergreen, fast growing, nitrogen fixer, to 5' tall, full sun/partial shade, 6' spacing.
- Bush Mallow (*Malocothamnus fremontii*) - evergreen, fast growing, to 5' tall, showy flowers, full sun, needs yearly pruning, 4' spacing.
- California Wax Myrtle (*Myrica californica*) - evergreen, fast growing, to 15' tall, prune to desired height, good hedge, 10' spacing.
- Coyote Brush (*Baccharis pilularis*) - evergreen, moderate growth, to 4' tall, tolerates poor/compacted soil, full sun/partial shade, 8' spacing.
- Oregon Grape (*Berberis nervosa*) - evergreen, slow growth, to 18" tall, 5' spacing. Also *Berberis aquifolium* - to 5' tall, 3' spacing.
- Elderberry (*Sambucus* spp.) - deciduous, fast growth, to 10' tall, prefers shade, few low branches, 10' spacing.
- Evergreen Huckleberry (*Vaccinium ovatum*) - evergreen, slow growth, to 8' tall, grow in full sun for berries, 5' spacing.
- Hazel (*Corylus cornuta*) - deciduous, slow growth, to 6' tall, full/partial shade, 8' spacing.
- Manzanita (*Arctostaphylos* spp.) - evergreen, slow growth, many species, 4-10' tall, full sun, 8' spacing.
- Mock Orange (*Philadelphus lewisii*) - deciduous, moderate growth, to 6' tall, full sun/partial shade, 6' spacing.
- Ocean Spray (*Holodiscus discolor*) - deciduous, moderate growth, to 8' tall, full sun, 8' spacing, profuse, long-lasting blooms.
- Pacific Rhododendron (*Rhododendron macrophyllum*) - deciduous, slow growth, to 12', prefers shade, 8' spacing.

Sources and References:

Tilford, Gregory L. "Edible and Medicinal Plants of the West" Mountain Press Publishing Company. 2004.

Tanner, Eddie. "Native Plant Landscaping in Coastal Humboldt County". Student Publication, CCAT. Fall 2003.

Source for permaculture info and links: <http://attra.ncat.org> and below

CSU Stanislaus website: <http://www.csustan.edu/>
<http://arnica.csustan.edu/biology/resources.htm>

UC Santa Cruz can be accessed at: <http://www.ucsc.edu/public/>
<http://csasfs.ucsc.edu>

Contact CCAT online at www.humboldt.edu/~ccat

Personal Communications with Sarah Dykeman, Richard Hansis and others, 2007.