PAST AND PRESENT USES WITH RECOMMENDATIONS FOR THE FUTURE:

BOLINAS COMMUNITY PUBLIC UTILITY DISTRICT LAND STEWARDSHIP COMMITTEE REPORT TO THE BOARD OF DIRECTORS REGARDING

BCPUD LAND OUTSIDE

THE TREATMENT PONDS SYSTEM

Prepared by the Land Stewardship Committee of the Bolinas Community Public Utility District

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SUMMARY

The report reviews the historical use of a part of the "Sharon Property," 50 acres that were part of land bought by the BCPUD in the 1972. While the wastewater treatment system serving the downtown area occupies an additional forty flat to gently sloping acres on the big mesa, the steeply sloping area was to be dedicated to community use. This report includes the history of land use before the purchase, the uses since the purchase and the current uses, including BCPUD activities, leases and ecological resources including plant, insect and bird life found in the area. Land Stewardship Committee recommendations for maintenance, restoration and enhancement of the landscape follow.

ACKNOWLEDGEMENTS

The information contained in this report represents the time and interest of many people, some of whose names are found throughout the document. Of those who are not named, we would like to acknowledge particularly Steve Matson, who was unfailingly willing to work with us to make the map show the most accurate details. It ties all the elements on the land today into a beautiful picture. Jennifer Blackman, Billy Pierce and Belle Wood of the BCPUD staff offered wise advice and support. Sandra del Valle, Elia Haworth and Ilka Hartmann gave us history in words and pictures. Mike Aitken, Phil Buchanan, Greg Hewlett and Lewis MacAdams stretched back in their memories to tell us how the community's relationship with the land began.

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1.0 INTRODUCTION

This report represents the work that the Land Stewardship Committee has done over the last roughly two years. We have met with a number of local and formerly local experts to get a sense of the history of the place before 1970, to remind ourselves of the history from 1970 to today and, finally, to gain an understanding of the current state of the land. This includes the activities of the lease-holders, the community's use of the various paths, and the presence of native and non-native flora and their interactions with fauna, from insects to birds to the small mammals.

In 1972, the BCPUD purchased 90 acres of land. The wastewater treatment pond system for the downtown area was built on 50 flat acres on the big mesa. The vision for the other forty acres, which slope down toward the town, was to make them available as a community resource. Today the land supports several areas of table crops and orchards, a goat farm, the Resource Recovery compost facility, and well-used bike, horse and walking paths surrounded by wildlife-rich woods and open land.

In the fall of 2013, the BCPUD created the advisory Land Stewardship Committee to study the current and historical uses of the non-treatment land. The Committee invited people from the community and other specialists to share their information about fire prevention, botanical and wildlife diversity and habitat, the interface of public and private uses, along with physical conditions, management constraints, and the complexity of issues regarding the responsibility of stewardship of this unique community resource. This report compiles the information the Committee has gathered and makes recommendations that we believe will enhance conditions on the land and bring it into long-term ecological and environmental balance.

2.0 LAND STEWARDSHIP COMMITTEE MISSION STATEMENT

June 17, 2012

2.1 Mission To promote conservation and compatible beneficial uses of the BCPUD lands (other than Mesa Park) for flora and fauna, including humans, and the preservation of wildlife habitat, within the Bolinas ecosystem.

2.2 Objectives

- Enhance public awareness, enjoyment and positive interaction with the ecosystem
- Encourage and enhance native biotic communities and habitats (flora and fauna) and discouraging invasive introduced species
- Develop an evolving picture of what resources the land held, holds and will hold
- Evaluate human uses in terms of those resources
- Avoid environmental nuisance, both aural and visual
- Manage the land for public health and safety, including reducing fire potential
- Review use and configuration of pathways.

2.3 Approaches

- Develop planning resources, including mapping of all uses and resources on the land
- Develop goals with reasonable priorities, budgets, time frames, and milestones
- Build in ample opportunities for input and review by all interested parties and agencies
- Recommend options to BCPUD Board for approval and implementation

3.0 HISTORIC USE OF THE LAND

This landscape was home to the indigenous Coast Miwok people for at least two thousand years; their main living site was in the sheltered flatlands along Pine Gulch Creek near the Bolinas Stinson Union School. Within "historic" memory, this area was the center of the Mexican land grant, Rancho Baulines, where in 1843 Rafael García and his family introduced livestock and agriculture to Coastal Marin. García moved north three years later, giving the ranch to his sister and brother-in-law and sister, Ramona and Grigorio Briones, who eventually kept cattle and other livestock on the land. As Gold Rush-driven logging brought newcomers to the area, Grigorio sold off portions of his property. By the 1860s, Rancho Baulines was dotted with dairy ranches and farms from Dogtown to Stinson Beach.

Upon his death, Grigorio left portions of the ranch to each of his children. His sons Pablo and José Briones inherited land that included today's downtown area and almost half of the Big Mesa. Under José's ownership, the land became a dairy ranch. In 1882, Frank and Nellie Waterhouse bought most of the Briones ranch, created Brighton Avenue, subdivided the land, called it Grande Vista and sold lots that were developed as home sites.

The Genazzi family built their farmhouse and dairy barn where Resource Recovery is today. Sometime in the 1960s the house, which had long been unoccupied, was burned down by the fire department as a training activity.

The land still belonged to the Genazzi family in the late 1940s when Hurford Sharon, nephew of Senator William Sharon, the owner of much of the real estate in downtown San Francisco, including the Palace Hotel, moved to Bolinas and became very involved with the community. Among the number of properties in Bolinas that Hurford and his wife Evelyn acquired was the Genazzi dairy ranch. They sold part of that property to Dr. Jurgen Reusch who intended the 20 acres next to be BCPUD property to be maintained as a California native flora and fauna preserve. In 1973, the Sharons sold the remaining 90 acres to the BCPUD.

3.1 The Sun Festival

There was a big celebration for the opening of the new wastewater treatment ponds and the land. A wildly colorful parade of people and decorations, kites, a community-made dragon, musical instruments and horses paraded up the trails to the land where all enjoyed music, dancing and a big picnic. Everyone was invited to be part of the Maypole dance. People called it The Land, and celebrated the commitment to community that it represented for a number of years. In 1978, for example, the festivities started at the beach and paraded through town with sixteen horses in the lead carrying children and adult riders to the festival site.

In some years there was a May pole; everyone was welcome to join in the drumming and music. People made generous contributions of food. Eventually the festivities moved to the beach, and is now held every year in June, to welcome the newest members of the Bolinas community, the babies.

3.2 History of the Community Garden

In 1974, a group of local people applied to the BCPUD to lease the land at the bottom of the hill, the site of the old Genazzi dairy farm, in order to build a community garden. There was a source of water, a barn, and many old rose bushes, apple and pear trees. It was a beautiful place. And the blackberries! No one thought to remove them; they were considered a community resource.

Townspeople were skeptical; they thought the place was "a swamp," impossible to farm. Others were incredibly helpful. Mary and Magi (Barror) contributed a greenhouse. A man from Rancho Baulines plowed the land and brought manure. Bill Brown taught a gardening class, and Coon (Fontan) worked there, too. Jan Tremblay and Diana McQuaid helped. All kinds of vegetables grew in raised beds. At first there were lots of people helping in the garden, but in the winter the soil did become anaerobic. Over time and for various reasons, the number of people working in the garden dwindled down to just a few until it was abandoned.

In 1977, Larry Hershman rekindled interest in the garden. He got a group together to request a lease from the BCPUD on about a third of an acre, the site of the earlier community garden. He obtained a grant with which he and others built the garden based on the biodynamic French intensive horticultural principles. The garden flourished; rows of six foot tall tomato plants covered in fruit and prolific vegetable and lush flower beds attracted bees and butterflies. Besides providing food for locals, health food stores regularly came to pick up produce. Hershman gave also lectures and demonstrations.

When Hershman left town in 1980, his assistant, Aguja Enahoro, took over as director. To protect the garden from deer, Enahoro and his assistant built a fence around the entire garden property. Unfortunately, some people perceived the fence as a device to reduce local access and they cut it down. Once the community understood the purpose of the fence, they tried to piece it back together, but Enahoro was disheartened and left the project.

Community members tried to keep the garden going but the site lay fallow until Don Murch began farming there. Today his son, Mickey, leases and farms that site and others areas on the land (see map).

4.0 MAINTENANCE OF THE LAND

The land below the treatment ponds is mowed to help reduce fire danger and keep the invasive plants in check. The mowers recognize native plants and try to avoid them as much as possible. BCPUD staff try to keep habitat islands for birds in all grassy areas, but the spray fields must be mowed. Areas that the public should avoid are shown on the map – the area within the red dotted line defines the treatment pond operational area, including seepage ponds, and monitoring wells. Groundwater is monitored at the well on the Resource Recovery site for salinity and bacteria. All

the asphalt paths are maintenance roads. Wastewater is pumped up from downtown to the treatment ponds through a pipe that is under the path under parcel B near the oak tree close to the monitoring well. The pipe is below 5' of cover and is always full.

A project to thin the dense eucalyptus grove along Mesa Road was designed by the Marin Conservation Corps and the BCPUD to reduce fire hazard and to allow light to penetrate and air to move through the area. The project focused on the eucalyptus grove along Mesa Rd. The original plan was to take trees that were eight inches across or smaller, but the project was actually limited to trees no bigger than six inches.

The area above the Sun Pond (see map) is a beautiful spot. While revegetation by native plants helps to slow water flow, invasive ivy will eventually overgrow the plants, reducing the absorption capacity of the area unless it is controlled.

Another area that the BCPUD watches is the canyon above Resource Recovery where the eucalyptus can spread into the open uphill area.

4.1 Reducing Fire Danger

Fires are hotter and move faster these days than in the past, for many reasons. We are seeing longer and drier summers. There's a major crisis with trees; so many are dead and dying in this area. Sudden oak, drought and pine canker all contribute to this condition.

Fuel load and topography are the key elements on the land as to how fire moves. A regular maintenance program for the land is helpful. This does not mean clear cutting, but rather keeping focused on reducing the low-to-the-ground fuel sources. It is important to break up the fuel and to keep vegetation 3' to 5' apart. As fuel loads are removed, replanting can happen. (For information about what are the best shrubs and trees to plant from a fire-reducing perspective, see the Fire Safe Marin list below.)

The BCPUD effort to thin the eucalyptus groves and clean up the debris has really helped to reduce fire danger. It is important to break up the eucalyptus areas by thinning the trees regularly. Any work to maintain the earlier work is critical. Another problem with unmanaged eucalyptus is that the oily duff, made up of leaves, seeds and peeling bark, piles up on the ground. If the duff catches on fire, it can take forever to put it out. Mowing regularly can help to break down the duff.

Interestingly, at least from a fire reduction perspective, ivy is not a big concern as it stays green and has a higher water content. Ivy is filling in the area at the base of the managed eucalyptus grove.

The possibility of maintaining an emergency route between the fire station on the big mesa and Olema-Bolinas Road if Mesa Road and Terrace Avenue are impassable is another fire related concern. A small pickup truck can travel on the paved maintenance trail from the fire station, get down the steep trail below parcel B, and exit at the Resource Recovery gate. But overhanging branches of a large oak tree would impede the passage of smaller fire-fighting equipment. A professional arborist could recommend what time of year it would be best to lighten the oak tree understory.

A standard fire truck needs a clearance of 15' (H) x 12' (W), though the preferred width is 17'. The road grade should be less than 23%, but if it is beyond 18%, the road should be paved with cement. The town has taken significant steps towards maintaining the two access roads between the mesa and town. However, the possibility of maintaining a gated emergency fire road through the lower BCPUD lands should be kept in our purview.

4.2 Selected California Natives from the Fire Safe Marin Plant List

Ceanothus spp.	wild lilac
Eschscholzia californica	California poppy
Mahonia repens	creeping mahonia
Mimulus spp.	sticky monkey flower
Polystichum spp.	sword fern
Ribes sanguineum	pink winter currant
Salvia spp.	sage

4.3 Maintaining Soil Health

Agroecologist Jeff Creque offered his advice on a field visit to the land.

In general, reducing the potential for soil movement off the land is very important, especially in the agricultural areas. Any use of the land should work with the natural features. As we expect weather patterns to become more severe, we must be especially mindful of how to keep the highly erodible and sandy soil in place in its current use and in the future. For example, to mitigate the water flow from the 525-foot drainage ditches at Parcel C, compost piles should be laid along the southwest boundary to direct the flow more evenly outside the enclosed area. This will help to retain the soil, reduce flooding of the foot path and encourage revegetation.

Awareness of soil erosion is a main concern, especially on a sloping landscape. In addition, all activities including the farming practiced on the land should be mindful of the principles of carbon sequestration, or carbon retention, and how this can be integrated into farm planning (http://www.marinrcd.org/seq-c-program). It is also important to understand soil mineral and biological composition so that best practices could include activities to address any unusual or changing conditions. It would be very helpful to have a comprehensive understanding of the landscape, as it is today and under changing conditions. People with expertise in hydrology and the physical and biological relationships in the soil should be consulted.

Overall, it is critical that all uses retain and enhance, rather than diminish, the resource that is the very land itself.

4.4 Marin County Native Tree Preservation and Protection Ordinance

This ordinance seeks to protect native trees and oak woodland habitat. It stresses the importance of preserving groups of trees with a diversity of age classes and minimizing fragmentation. This

allows for linkage and corridors including the growth of understory species and associated wildlife, not simply protection of individual trees. It encourages local agencies to adopt similar ordinances. The Land Stewardship Committee is reviewing and plans to make a future recommendation to the Board to adopt the practices of the Marin County Native Tree Preservation and Protection Ordinance. (http://ucanr.edu/sites/oak_range/files/60606.pdf).

5.0 PATHS

The Committee's focus is on the three types of paths within the 40 acre area: the bike commuter trail, the maintenance roads and the foot (and horse) paths. All paths serve as gateways for the public to enjoy the land.

5.1The Bike Trail

This 0.9-mile-long off-road access trail completed in 2008 runs from the intersection of Overlook and Mesa Rds. to the intersection of Mesa and Olema-Bolinas Rd. and to the entry to Resource Recovery. Installation was funded by the Bay Area Air Quality Management District as a commuter bike path, although the funding wasn't sufficient to do a quality installation. The trail ties in to the County's paved off-road path that starts at the bottom of Mesa Road and runs to the school. Missing is a segment connecting Resource Recovery to downtown, which remains impeded by a steep bank to one side, private property to the other, and parking needs.

Composition: Except in the lower eucalyptus grove, it is 7/16-to-fines pathway gravel from Stony Point Rock Quarry, with weed-control fabric beneath some areas, and then compacted wet with a vibrating roller to 4" thick and 5' wide, with some drain-rock-filled "burritos" crossing under in the marshy area around the goat farm. This surfacing system has problems resulting from uneven distribution of particle size during gravel placement, washing out of fines by rain (possibly due to insufficient wetting during compaction) with subsequent instability of the riding surface, slippery spots where fines are in excess, erosion trenches where the trail is too close to the fall line for too long without a grade reversal, grass intrusion both by roots in the sides and seeds down from the top, and creation of deep potholes by horse traffic in wet season, in addition to the maintenance challenges mentioned below. Within the lower eucalyptus grove, the trail surface is just native mineral soil, which has held up better due both to its favorable mix of sand and clay and the lack of growth of grass in the grove. However, roots there progressively protrude to become riding obstacles and are laborious to hack away.

Grade: Grade has been held to below 8% for ease of climbing both on bikes and in wheelchairs. However, there remain numerous grading challenges, such as the fall-line sections mentioned above, as well as the switchbacks. The unavoidable double switchback just above O-B Road is difficult to negotiate, and the one below the goat farm should be regraded to a 'rolling-crown' design that would drain better.

Drainage: The area between the goat farm and the hairpin turn below receives a high amount of water runoff which erodes the path. Diversion channels or grade-reversals would be needed to prevent further damage.

Maintenance Challenges: The trail has no hard edging so it degrades. Parallel to Mesa Rd., grasses have pushed in from both sides leaving now a 1'-wide track to follow. Gophers and

horses leave 4-5" potholes and roots protrude in sections passing through the eucalyptus grove. On the lower trail areas, eucalyptus buttons drop and impede bicycle tracking. Thinning eucalyptus along the path between the switchbacks would improve bicycle safety.

After storms, the maintenance requirements increase due to downed branches, bark shards, and erosion gullies. However, after storms the BCPUD crew is especially busy clearing downed trees from key facilities, patching new leaks in pipes under caving-in dirt roads, hunting down stormwater intrusion into the downtown sewer, and making drinking water treatment plant adjustments to deal with the influx of mud from the Arroyo Hondo watershed. These critical needs of the water and sewer systems have to take priority.

Funding: The BCPUD allocates some funds for maintenance as was required by the project's funders and BCPUD's insurers. A large grant might have been made available for the project's installation at the outset, but only for a paved 5-6' wide asphalt trail (CalTrans standard), because of the superior riding surface and greatly reduced maintenance costs. However, because of the wildland setting of the Bolinas bike trail, an alternative material was/is preferred to the stark, urban quality of asphalt. The downside is a greatly increased maintenance burden that is very difficult to keep up with, resulting in much less use of the trail for commuting than was hoped for.

Alternative Paving: Information is needed regarding an alternative hard paving material that offers better riding with lower maintenance. Various composites (aggregates) consisting of crushed stone bound in a polymer matrix have become available. More information is needed about their specifications, cost, and long-term performance in the field. At present, even though the project did achieve—with great difficulty—its goal of being less steep than Terrace Avenue, it is still more difficult to ride than Terrace Avenue because of its less smooth, hard, clean, and tire-gripping riding surface. Consequently, even experienced adult riders tend to prefer Terrace Avenue. If we are to achieve the goal of having an all-weather, easily navigable, car-free transportation route between Big Mesa and O-B Road, we will need to find the funds to install a major upgrade to the trail's surfacing.

Asphalt costs appx. $10 per foot for a 5' width. A replacement material with 4" road base could be as much as $50k. Thought needs to be given to devising an effective maintenance program for the current situation. Eucalyptus tree branches that overhang the trail could be removed. (Don's note: I don't think this would be cost-effective, because there are so many and because the wind throws detritus onto the trail from up high and well off the trail. Path cleaning methods such as trail roller brushes could be considered, but these won't take care of the roots or potholes or gullies.)

Nonetheless, the path is truly appreciated and used by many as the car-less and least steep terrain to travel between up and down town.

5.2 Footnote to the Bike Trail Project: Native Grass Planting at the Entrance (Intersection of Mesa and Olema-Bolinas Road)

When the bike path from the school to the big mesa was built (see the path under vegetation on the map), it was clear that the steep access to the trail on the BCPUD land would be a challenge to young bike riders, both the wary and the free-wheelers, and that erosion was a

problem waiting to happen. Instead of taking the engineering route, that is, building a retaining wall, Don Smith suggested that some planting might hold the area. Lea Earnheart, a local native landscape restoration expert, accepted the job.

The plan included more than the entrance to the bike path. The whole slope was planted with native strawberry, sword fern, coffeeberry and bunch grasses (California fescue). But the compressed soil, the dense eucalyptus forest, the north facing orientation and the drought has made survival of the natives difficult. Also regular weeding is crucial. But some of the ferns and coffeeberry are taking root somehow, demonstrating the ability of native plants to survive in their own soil despite adverse conditions.

Some of the fescue was planted too close together and didn't seem to be flourishing. However the native bunch grass on the lower slope has taken root. It is a welcome sight on the entrance to town and to the land.

5.3 The Maintenance Roads and Farm Access

These narrow asphalt roads (beige lines on map) are maintenance roads for BCPUD personnel. The roads traverse both public and non-public use areas. Having been installed in the 1970's they are in a somewhat degraded condition. Unnecessary use is discouraged to avoid further breaking up of the paving.

No motorcycles or vehicles are allowed with the exception of BCPUD vehicles. The Farm ATVs and other equipment are allowed to travel between Parcel A and B. To reach Parcel C they travel down to the Sun Pond and then up an unpaved steep slope to reach the lower gate at the bottom of Parcel C (former Sun Festival Site). Farm may access the upper gate of Parcel C for deliveries upon 48-hour notice to the BCPUD.

The dirt road cannot revegetate or hold soil because of the vehicle use and so asphalt chunks were recently added to add traction. Hopefully this will hold through the winter and provide the needed access.

5.4 Foot Paths and Horse Trails

These paths, delineated by the black lines on the map, serve people on foot seeking a quiet non-vehicular route between local destinations; in fact the areas that the paths traverse often destinations in themselves. To witness the diversity of seasons in a nearby wildland setting attracts dog-walkers, joggers, nature lovers and those seeking a quiet refuge. Horseback riders often share the same routes in taking a detour from the bicycle trail where they are not allowed to go. In recognizing the value of this experience, the Land Stewardship Committee seeks to protect and improve the paths and trails to maintain the quiet character of the experience.

Just as the bicycle trail is subject to erosion, excess water flow can cut ruts and destabilize areas, especially on grades. No projects to trench across the trails or otherwise degrade the paths should be undertaken. Run off from other areas must be diverted away from the paths.

Wherever possible, foot access and farm equipment routes should be separated to ensure safe use for all. A steep grade above the Sun Pond leads to the former Sun Festival Site and Parcel C.

Asphalts chunks were applied recently on the grade to provide traction for farm equipment, but they make passage by foot difficult and cumbersome. A parallel path built for foot traffic has started to revegetate, which will stabilize the soil. However, because the chunks spill over at the bottom of the foot path, corrective work at the base is needed. This narrow steep path could be reinforced with a border along the edge by a crew using railroad ties and wood chips.

Another popular foot path runs between the south border of Parcel C/Reusch property and across the Sun Festival Site to join the grade down to the Sun Pond. Mowing patterns have diverted this cross-through path to the farm access route. The 'connector path' can be re-established and would then direct walkers to the foot path side of the grade. This could be good volunteer project.

In this same area, adjacent to the Reusch property, Jeff Creque recommended slowing farm run off with compost. The dispersion of water flow has reduced the impact on the path and has encouraged revegetation of the border areas.

In general, natural trails of trodden grass will self-maintain with use. The impact of vehicles on grass/vegetated areas is apparent, with loosened soils, plants impacted into the ground, and a noticeably diminished visual and aesthetic experience. Unnecessary vehicle use in these areas is not allowed and should be reported to the BCPUD if it occurs.

Keeping an open vista for the public along the paths motivated the Committee to negotiate an increased set back between the paths and metal fencing of Parcel C. A compromise was reached during Committee discussions and the new balance seems to be working for all.

On these lower 40 acres, it is important to detect incipient problems, such as new areas of erosion or patches of invasive plants, as early as possible. As we walk the area frequently, the Committee can offer recommendations to the Board for timely possible solutions that will help to maintain this gem of a public resource for the present and into the foreseeable future.

6.0 LEASES

6.1 Summary of the Current Leases on the Land

6.1.1 The Goat Farm

This lease was created in 2008. Alethea Patton, Lee Dodd and Melissa Wood are the lessees. The lease will be up for renewal in 2018. The property consists of two sections totaling about 3 acres. The allowed uses are raising of dairy goats, brush goats, cultivation of crops, and bees, the use of guard dogs, sheds, rainwater catchment, and fencing.

6.1.2 Murch Parcels

This lease was created in 2011 and modified in 2013. Mickey and Don Murch are lessees. The lease up for renewal in 2016 for another five year; it is expected that in 2021 a new lease will be requested. The property consists of three separate parcels, Parcel A (0.8 acres) at resource recovery, Parcel B (1.2 acres) up the steep path, and Parcel C (2 acres) above the sun festival site. The uses are cultivation of food crops, orchards, and compost making. Any proposal for additional facilities, fences or water storage systems must be brought to the Land Stewardship Committee for review, and then approved by the BCPUD Board.

6.1.3 Resource Recovery

There is no written lease for the use of the Resource Recovery property. The original project boundary included what is now being farmed as Parcel A West. The boundaries as shown on the map do not include the work that has been done by the management to thin the trees on the knoll above the area. The area that is used to chip debris or age compost is limited to the flat area behind Parcel A West.

6.2 The Goat Farm

In 2008, Kanoa Bartlome, Melissa Wood, Eat Dog and I approached the BCPUD about leasing a portion of the land that was previously leased by Jimmy Friedrickson for many years. He had used the land to grow tomatoes & cucumbers but it hadn't been in use for many years. I became aware of the lease because Sasha Earnheart-Gold was keeping bees up there for a while.

We worked out a lease agreement with the BCPUD where we would have no more than 10 adult goats. The lease is approximately five [sic] acres; the bike path cuts through the lease property. We started in October 2008 with five Oberhasli nannies and soon purchased three bucks: an Oberhasli buckling, a Nigerian dwarf buck and a half Oberhasli/half Nigerian buck. We built a milking/shelter barn with a metal roof and created a water catchment system that provides water for the goats. Along with a small amount of grain and alfalfa, the goats mainly eat branches of cotoneaster and black acacia that we cut for them. We milk the nannies for our own consumption and raised some of the male babies for meat.

After three years, we realized that the carrying capacity for that property is five goats or less so we scaled back our operation to make it more sustainable and also less work for us. Currently, we have three male goats on the land and have three females at another location on the Big Mesa. The females will be returning to the leased land later this spring. We all enjoy the food security of keeping goats for milk and meat and I personally feel a great kinship with goats; raising them makes me feel connected to my ancestors.

For me, goats are the perfect domestic animal - they are smart, not too large and unwieldy, fairly docile and good brush clearers. One thing that has surprised us all is that they do not like the European grass that grows on the land (*Festuca arundinacea*) and won't eat it. They have wiped out all of the cotoneaster that was in their pasture though and pushed back the acacia as well. We hope to continue to keep a small flock there and perhaps add a sheep or two (to eat the grass and for meat and wool). We have also had a few bee hives on the property but they don't seem to thrive at this location so we don't presently have any bees there.

Alethea Patton

6.3 Murch Lease on the Land: Breaking New Ground

As a farmer who was born on a functioning fertile piece of floodplain, I was only accustomed to easy plowing, deep loose black silt. Gospel Flat is a great place to farm in the summer, yet is very wet and sometimes flooded in the winter. As our 24-hour farm stand gained momentum, it became a heartbreak to stop producing for the winter season, and waiting for the ground to dry out in the spring was like pulling teeth. With some highland fields, we believed we could farm dryland vegetables, and cover the winter season with leafy greens.

Taking on upper leases was my first experience of breaking ground. On my first walks through the parcels, I swerved along deer trails, tiptoed around poison oak, and scrambled under the low arching branches of cotoneaster. This was definitely the Wild West, and I was excited about what lay beneath my feet, dirt that had the promise of a winter garden.

Getting down to just dirt is called breaking ground. My goal was to open up the land without breaking my equipment. When it is well-rooted bushes vs. tractors, the forces are about equal. An innocent stick can slip inside a moving machine and tear off an important part.

When land sits fallow like this, a large amount of the nutrients in the system are in the plants. Although it would be easier and quicker to remove the brush and leave nice, "clean" soil behind, that would be robbing the system of its nutrients. Incorporating the tangle of brush into the ground is more difficult, however, it leaves a nice fertile soil.

We began with a mower that can chew up ten-foot tall bushes, leaving a pile of sticks on the ground. Next, I took a double-bottomed turn-over plow and removed one of the plowshares. Thus I was putting the entire force of the tractor to a sixteen inch blade, in an effort to sever the roots, flip over the mass of vegetation and dirt, and leave it to decompose for two years.

Breaking ground was the biggest destruction I had ever made. Yet I had created two fields of rich black open dirt. I had taken on a profound responsibility to produce good food for my community.

Dry farming is farming without irrigation. In the fall and winter, we seed and transplant crops with the rains. Greens, and other quick growing crops can be harvested before the last rain of the spring. Another crop can promptly be seeded into the moist ground. Even without late spring rains, seeds can germinate, and good crops of deep-rooted vegetables can grow all summer, feeding off the moisture stored in the soil.

Resource Recovery has been a great help to us. We have hauled a total of about 1000 yards of compost onto the land, enriching it with a long-lasting humus. The goal is to maintain a carbon-rich soil environment that can soak up water in the winter and release it to our vegetables and orchards over the spring and summer.

Our orchards are planted like the old orchards that are still evident in Dogtown, on the east side of Hwy 1. These are century-old "standard" apple trees, up to thirty feet tall, mostly hollow, and, even without attention or irrigation put out heavy loads of fruit high out of the reach of deer.

I have grafted the heirloom varieties left by Jesse Schwartz, a Bolinas apple enthusiast in the eighties, onto standard rootstalk. The combination is a sort of historical hybrid--pioneer sized trees with heirloom varieties from a later generation. The trees are spaced so that vegetable crops can be grown between rows of trees.

Mickey Murch

6.4 The Bolinas Stinson Resource Recovery Project

Growing awareness of the importance of collecting yard (or green) waste and returning it to the soil as compost coupled with the concern about the buildup of tree and brush debris that could fuel fires in Bolinas and Stinson Beach led the BCPUD and the Stinson Beach Water District to

form a subcommittee to look into the feasibility of using a portion of the Land to accept and process yard waste from the two communities.

In 1997 the Bolinas Stinson Resource Recovery Project opened at the foot of the BCPUD land, on the former site of the Genazzi farm house. It is easily accessible from Olema-Bolinas Road. Mike Aitken, who lives next door was invited to participate in the formation of the project. He eventually became the manager of the facility and has been the key to the success of the effort over the years. The Bolinas Stinson Resource Recovery Project Board meets monthly and includes Bolinas and Stinson Water Districts and Fire Departments.

The charges that people pay to drop off debris, along with occasional grants, pays for the project management, assistants and equipment use. Having the Resource Recovery in town means that there is less temptation to dump yard waste over the cliff and eliminates the need to make the long trip to the County landfill.

The rich compost produced at the project includes some larger pieces; these protect the finer matter from blowing away and allow the soil to be aerated. (The larger pieces can always be separated with the use of a sieve.) The compost is used on the landscape, as mulch, potting soil or soil amendment. Returning it to the land from which it came is a great locally available benefit.

7.0 FLORA AND FAUNA

7.1 Plant-Insect Relationships

Plant-insect relationships are critical reasons for protecting and restoring native plant species. Many insects, from butterflies to beetles to bees, have evolved to rely on one or a few native plant species for nourishment and/or for nurseries (host plants) for their young. The annual wildflower called meadowfoam is a good example. It was probably seasonally present here in moist places called vernal pools, almost none of which have survived in Bolinas. However, it is one of the easiest wildflowers to grow, and at least four Bolinas gardeners have restored meadowfoam to their home gardens.

California has over 1500 different species of native bees, most of which are solitary, living alone in cells underground, rather than social, like the European honeybee. One of those species, the meadowfoam bee, cannot survive without meadowfoam. During a drought, the young bees will wait in their underground nests and not emerge till a wet year enables meadowfoam to germinate and bloom again. Though many insects can pollinate meadowfoam, the percentage of good seed is significantly greater when the meadowfoam bee is present.

Another interesting local example of insect-plant relationships is the ubiquitous evergreen shrub called coyote bush, which supports over 200 species of insects. This plant once inspired an organization called “Friends of the Coyote Bush,” whose mission was to educate people about our under-appreciated coastal ecosystem. Considered by many to be a “junk plant” warranting removal, coyote bush is actually a critical component of coastal scrub plant communities and a useful “harmonizer” in local hedgerows.

Birds, such as the white crowned sparrow, the wrentit (California's "native son") and the bushtit, make use of it. Coyote bush pumps out the nectar in late fall, when little else is blooming. Butterflies like the West Coast lady are frequent visitors, and with its fibrous root system, it holds the soil of our steep cliffs. Removing it increases cliff instability.

Also extremely useful in native plant gardens, where it provides privacy hedges and habitat islands, the evergreen shrub called coffeeberry grows prolifically in areas below the sewer ponds and on the Mesa. The seeds are found in fox and coyote scat. It is not pyrophytic, that is, it does not contain the volatile oils that make it fire-prone. It is a bird-magnet in the garden and in the wild, providing just the right kind of shelter for many species.

Since some of the invasive shrub cotoneaster has been removed, we see another native shrub, California hazel, returning to the sewer ponds. The nuts produced by this native deciduous shrub are beloved by many creatures, including people. Birds that love to dig in duff frequent areas under California hazel, which drops its leaves in fall to provide a rich haven for insects. In winter, it has a tiny red blossom, almost invisible, with long showy male catkins.

Blueblossom ceanothus, or California lilac, is native to Bolinas, and probably once grew on the sewer pond lands as well. Descriptions of San Francisco, whose flora and geology is similar in many ways to that of Bolinas, said that before development, "every hillside was crowned by blueblossom." The fragrance of its pale blue blossoms is, or should be, an indelible part of the California spring.

The bushtit, another one of our resident birds, builds its pendulous nest in that shrub, and the Ceanothus silk moth requires it to lay its eggs on. The hum and buzz in the spring from numerous insects enjoying the nectar of blueblossom is an auditory reminder of the riches of our coastal California habitat.

Another instance of the marvelous variety of our floral-faunal interactions, and one that was lavishly present on the Sewer Pond Lands into the 1990s, is provided by a low-growing perennial in the pea family called coast, or bi-color, lotus. This extremely showy plant is thought to have been a necessary host plant for the now extinct or nearly extinct lotus blue butterfly. Coast lotus flourished in between bunches of the native oatgrass, Danthonia californica, one of our many native bunchgrasses. In a picture taken in the 1980's, you can see the native oatgrass with coast lotus as its consistent companion.

These are just some of the many riches that once were found, and could be part again, of the beautiful land-form sloping gracefully from the Mesa to downtown Bolinas.

Judith Lowry

7.2 List of Plants on the Land Today

7.2.1 California Native Plants on Proposed Restoration Area (42 + 1 Formerly Present)

Achillea spp., Yarrow
Agastache, Mint
Agrostis halli, Hall's bent grass
Agrostis pallens, Diego bent grass
Arbutus menziesii, Toyon
Artemesia douglasia, Mugwort
Aster chilensis, California aster
Baccharis pilularis, Coyote brush
Brodiaea *terrestris, Dwarf brodiaea*
Camissonia ovate, Sun cups
Carex spp., Sedge
Chlorogalum pomeridianum, Soap root
Cupressus magnacarpa, Monterey cypress
Danthonia californica, California oat grass
Equisetum arvense, Horsetail
Escholschzia californica, (maritime) California poppy
Festuca rubra, Red fescue
Frangula californica, California coffeeberry
Heracleum lanatum, Cow parsnip
Hordeum brachyantherum, Meadow barley
Iris douglasiana, Douglas iris
Juncus spp., Rush
Lonicera hispidula, California honeysuckle
Lotus formosissimus, Coast lotus (formerly present)
Lupinus nanus, Sky lupine
Madia sativa, Tarweed
Marah spp., Manroot or Wild cucumber
Perideridia kelloggi, Yampah
Polystichum munitum, Western sword fern
Potentilla anserina (?), Silverweed cinquefoil
Prunella vulgaris, Self heal
Pseudotsuga menziesii, Douglas fir
*Pteridium aquilinum pubescen*s, Bracken fern
Quercus agrifolia, Coast live oak
Rubus ursinus, California blackberry
Sanicula spp., Sanicle
Scirpus californicus, California tule
Sisyrynchium bellum, Blue-eyed grass
Thalictrum spp., Meadow rue
Toxidendron diversilobum, Poison oak
Tritelea hyacinthina, White Brodiaea
Typha spp., Cattail

Vicia spp., Vetch

7.2.2 California Native Plants in Other Areas (6)

Bromus carinatus var. carinatus
Calandrinia ciliata, Redmaids
Juncus effuses
Luzul comosa, Wood-rush
Phalaris arundinacaea
Stipa pulchra, Purple needle grass

7.2.3 Aggressive Exotic (Non Native) Plants for Control/Removal (11)

Cotaderia spp., Pampas grass
Cotoneaster
Cytisus scoparius, Scotch broom
Delairea odorata, Cape ivy
Digitalis purpurea, Foxglove
Erharta erecta, South African veld grass
Festuca arundinacae, Tall fescue
Genista monspessulana, French broom
Leucanthemum vulgare, Ox-eyed daisy
Rubus armeniacus, Himalayan blackberry
Spartium junceum, Spanish broom

Compiled by Tish Brown

7.3 BIRDS ON THE 40 ACRES OF BCPUD LAND

Year-Round*
Great Blue Heron
Turkey Vulture
White-tailed Kite
Northern Harrier
Sharp-shinned Hawk
Cooper's Hawk
Red-shouldered Hawk
Red-tailed Hawk
American Kestrel
California Quail
Band-tailed Pigeon
Great Horned Owl
Anna's Hummingbird
Red-breasted Sapsucker
Nuttall's Woodpecker
Downy Woodpecker
Hairy Woodpecker
Northern Flicker
Olive-sided Flycatcher

Pacific-slope Flycatcher
Black Phoebe
Steller's Jay
Western Scrub-Jay
American Crow
Common Raven
Chestnut-backed Chickadee
Bushtit
Pygmy Nuthatch
Spotted Towhee
California Towhee
Song Sparrow
White-crowned Sparrow
Red-winged Blackbird
Western Meadowlark
Brewer's Blackbird
Brown-headed Cowbird
Purple Finch
House Finch
Pine Siskin
Lesser Goldfinch
American Goldfinch
Evening Grosbeak

Winter*
Merlin
Mourning Dove
Savannah Sparrow
Fox Sparrow
Lincoln's Sparrow
Golden-crowned Sparrow
Dark-eyed Junco
Townsend's Warbler

Summer*
Allen's Hummingbird
Western Wood Pewee
Say's Phoebe
Tree Swallow
Violet-green Swallow
Northern Rough-winged Swallow
Cliff Swallow
Barn Swallow
Common Yellowthroat
Wilson's Warbler
Western Tanager
Black-headed Grosbeak

Out of Range*
Palm Warbler

Courtesy of Keith Hansen

*Range information taken from *A Guide to Field Identification: Birds of North America,* Golden Press, 1983.

7.4 General Plan to Restore Native Habitat on Approximately 10 Acres that Lie Outside the Spray Area

July 22, 2015 - revised October 1, 2015

On December 12, 2014, the BCPUD Land Stewardship Committee voted (8-0) to recommend to the BCPUD Board of Directors to designate ~10 acres (out of approximately 30 acres that lie outside the wastewater treatment ponds area) as a Habitat Restoration Area. The following is a proposed General Plan for habitat restoration for that area. If the Board approves of this general plan, a specific restoration plan for each of the four sub-areas will be developed and presented to the Directors for approval.

The four contiguous areas are: the Knoll, the Lower Arroyo, Upper Arroyo and the Old Sun Festival site (see map). These four sites vary widely in terms of vegetation, morphology, hydrology, elevation, wind and solar exposure. The Habitat Restoration Area would be adjacent to 40 acres of privately-owned open space (Reusch land).

During the f
all of 2014 and Winter and Spring of 2015, Committee members made more than a dozen field trips to the proposed designated area in order to assess and survey the state of the existing plant communities. Judith Lowry and Ashley Ratcliffe, two renowned native plant experts also accompanied committee members at various times and contributed greatly to the Committee's understanding.

The Committee found that despite the current overall degradation of the native plant community, there is still a great opportunity to conserve and foster Bolinas native plants and habitat. Forty- four native plant species were identified to date by committee members (see Appendix). Undoubtedly more species could be found with more time and across various seasons. This plant survey is probably the first one ever conducted on the BCPUD land.

The goals of the native plant restoration effort would be to protect the existing native plant populations, create opportunities for those plant species to increase in population and to replant selected and carefully screened native plants. It is not the goal of this effort to eliminate all or even most exotics since that would be almost impossible. However, implementing a native plant restoration effort would enhance the native habitat on public land that many of us value enormously, would help our local wildlife that depend on certain native plants and would greatly reduce the wildland fire threat to nearby downtown Bolinas.

The following is a brief description of each of the four areas and what type of restoration is envisioned. A range of costs and a timeline is included.

7.4.1 Knoll

Along the eastern edge the of proposed habitat conservation area a prominent knoll rises steeply above the Olema-Bolinas Road above the entrance to downtown Bolinas. The entire knoll area is about two acres. Eucalyptus, Monterey cypress, Monterey pine, cotoneaster, broom and exotic grasses predominate but the area is also home to a dozen or more coastal live oaks some fairly large. The oaks here and in the other three areas as well all appeared free of any signs of sudden oak death, which is widespread in coastal California. Other native plants include coffeeberry, coyote bush, and ferns (see plant list, section 7.2).

The top of the knoll, about one acre in size, is flat and covered in a mix of native and non-native vegetation. About half of the flat area is occupied by grasses and bushes. It is somewhat wind protected with good solar exposure with a micro climate very different from the wind swept westerly end of the proposed Habitat Restoration Area. A paved path borders the northern edge and brings a steady flow of walkers and joggers past the level top of the knoll. In recent years the BCPUD has partially cleared cypress, pine and eucalyptus from the slopes of the knoll.

Restoration recommendation:

- Remove all cotoneaster by hand (chainsaw) and cover stumps to prevent re-sprouting.
- Mow flat areas to keep exotic grasses and bushes under control avoiding marked native plants.
- Replant specified native bushes and grasses avoiding fire-prone species.
- Replant coast live oaks grown from acorns of existing oaks in the area.
- Observe and protect new native plants that reappear after non-native removal.

Wildlife note: Some incredibly large native woodrat nests can be found in this area.

Timeline: Six months to two years to initiate. The top of the knoll is the first priority for restoration.
Cost: $1,500 - $5,000

7.4.2 Lower Arroyo

This is a steep arroyo about two and a half acres in size that lies between Resource Recovery and the old Sun Festival site. It is bordered on the southeast side by the Reusch land. A small ephemeral stream flows out of the Sun Pond and bisects the arroyo as it makes it way past RR.

Here eucalyptus trees dominate the landscape with help from cape ivy, cotoneaster, and broom. But even here native ferns and toyon can still be found amidst the jumble of downed eucalyptus branches and half fallen trucks. A couple of native Douglas fir trees reside just uphill from the edge of the eucalyptus trees. An informal, historic foot path leads through the understory from the Sun Festival site to RR giving Mesa residents a more direct way to reach downtown on foot.

Of the four locations in the habitat restoration area this is far and away the most challenging, most degraded and most prone to a dangerous wildland fire. Its close proximity to downtown makes the fuel load buildup particularly worrisome. A fire in this area on a windy, dry day would be very challenging to control.

Bolinas Fire Chief Anita Tyrrell-Brown, one of the resource people who took time to meet with the committee, expressed her concern about the fire danger here. She welcomed any action by the BCPUD that diminishes the fuel load and cited the BCPUD's thinning of the eucalyptus along Mesa Road as a template for action here. Chief Brown also cautioned against replanting any fire

prone natives to avoid unintended fire risks.

Chief Brown brought the arrival of the tortoise beetle (*Trachymela* spp.) that feeds on eucalyptus leaves to our attention. Signs of the beetle's appetite for eucalyptus are clearly visible in many trees. No one knows how this will affect the ecology of the BCPUD land, but this is something that should be monitored.

Notable fauna: In the fall of 2014 masses of monarch butterflies were observed on several occasions in Douglas fir and eucalyptus along the north facing slope just below the Sun Festival site. Here there is good solar exposure and wind protection. It appears that the monarchs rested here for a while but did not "overwinter". Also, on Committee field trips, a bobcat was spotted here.

Restoration Recommendation:

- Thin and limb up eucalyptus and remove downed wood as was done by the BCPUD along Mesa Road a few years ago being careful to avoid what native vegetation still exists.
- Work would need to take the monarchs into consideration and would have to be done during Spring-Summer.
- Remove broom and cotoneaster as they also contribute to the fuel load and fuel ladder.
- Contain the advance of eucalyptus from spreading to new areas.
- Foster and protect the rebirth of latent native plants after fire prevention efforts.

Timeline to initiate: One to two years. Ideally this would happen tomorrow but it will take some time to arrange, finance and accomplish. The BCPUD had the help of the Conservation Corps for the Mesa Road eucalyptus work and a similar partnership would be ideal.

Cost: Substantial, to-be-determined.

7.4.3 Old Sun Festival Site

Immediately to the southeast of the eucalyptus forest the land opens on to gently sloping grassland that surrounds three sides of Mickey Murch's parcel C. This U-shaped 2-3 acre site was formerly the location of the old Sun Festival celebration before it was moved to the beach.

Well used footpaths crisscross the site and distant views of Bolinas Bay can been seen from one of the trails in the upper southeast corner of the land.

Morphologically, this is where the land gradually loses elevation from "the Big Mesa" and dips steadily toward sea level. During winter this site becomes very wet as sheets of water runoff from this higher elevated land and downslope across this field. Except for the southeastern edge the field gets good solar exposure

Most of the ground cover is non-native grasses. A few eucalyptus and Monterey pine grow along the southeastern edge along with some native toyon. One mature live oak resides in the middle of the field and nearby a large native Douglas fir towers above a jumble of broom and other exotics.

Though not extensive, many of the usual small native plants can still be found here. Coffee berry, ferns, coyote brush, Douglas iris and lupine are in evidence. Importantly, *Brodiaea terrestris*, Dwarf *Brodiaea*, *Tritilea hyacinthine* and White *Brodiaea* also inhabitant this area.

Wildlife: This area shares many of the same animal species as the other three. Its open grasslands with nearby perches give red tails and other hawks good hunting grounds for small mammals. Bobcat, coyote and deer can also be seen here.

Restoration recommendation:

- Mow before annual grasses have gone to seed while avoiding the demarcated native bushes and shrubs.
- Expand the footprint of some of the native grasses found here, (though a slow and humble process) could be very rewarding. Approximately, 95 percent of our native grasslands in California have been lost, making the plants that still exist rather important.
- Replant certain compatible native flowers and bushes to complement the existing mosaic.
- Plant an assortment of small native bushes along the southeast fence line of parcel C.
- Remove broom from a small area next to border with the Sun Pond.

Timeframe to initiate: 6 months to 2 years
Cost: $500-$2500

7.4.4. Upper Arroyo including Sun Pond

The upper arroyo which lies above the Sun Pond is morphologically a continuation of the lower arroyo but there the similarity ends. This area has the most intact native habitat found on the BCPUD land. Indeed, unlike the other areas, much of the land is covered in natives. Six or more live oaks reside here accompanied by coyote bush and coffee berry. Swaths of native juncus lead down slope to the pond. A couple of Douglas firs are found here as well.

Despite the good showing from the natives there is very strong competition from ivy and other invasives. Many of the natives are draped in an extensive blanket of ivy that will eventually deprive the natives of light and kill them. A small patch of poison hemlock, broom and non-native grasses grow here as well. Along the paved path to the north a row of cotoneaster occupies the upper rim to the arroyo.

Wildlife is abundant here for obvious reasons. The small body of water attracts California pond turtles, large predator birds like green herons and egrets eat in the shallow waters, and owls search the shoreline for a meal. The thicket above the pond provides good hiding for deer, fox, bobcat, coyote, and it is only steps away from perennial water. During winter, Pacific chorus frogs belt out their tunes with such an enormous racket that they dominate the sound scape at night.

Restoration recommendation:

- Remove the ivy. This will be labor intensive since it will have to be done by hand.
- Cut down cotoneasters and cover stumps to prevent regrowth.
- Pull up poison hemlock.
- Mow non-native grasses and cut/pull broom.
- Replant small area with appropriate natives after removal of broom and cotoneaster along path down to Sun Pond coming from the north.

Timeline to initiate: 1 to 2 years
Cost: $10-15,000

In Conclusion

The Land Stewardship Committee recommends that the BCPUD Board of Directors approve this general plan to restore native habitat on a portion of the BCPUD land. Such a plan when implemented will help conserve and expand the native plant habitat on public land while also greatly reducing the wildfire danger to downtown and other neighborhoods of Bolinas.

Financing for each of the restoration areas is yet to be determined but will be included in a specific restoration plan for each area. In-kind volunteer labor will be used as much as

practical but funds will also be needed. The thinning of the eucalyptus and other trees in the lower arroyo will require the lion's share of the budget. In that case, utilizing the Conservation Corps and acquiring a grant for wildfire safety will probably be necessary.

8.0 RECOMMENDATIONS

General

- Adopt the proposal to designate a Habitat Restoration Area on approximately ten acres and adopt the general plan of that area presented in this report for environmental, cultural and wildland fire prevention reasons.
- Continue the two farm leases (approximately 9.5 acres in total). Review the leases at the time of expiration. No new areas should be leased.
- Determine exact physical boundaries of the approximately one-half acre site of Resource Recovery.

Specific

Maintenance

- Continue managing eucalyptus groves, remove saplings, monitor expansion from canyon.
- Consider including an item in the annual budget related to all aspects of land stewardship.
- Consider retaining expert or experts to advise on maintenance and improvement of soil retention and tree related issues.

Fire protection

- Encourage growth of north coastal shrub vegetation that has lower flammability (density, height, thickness of understory).
- Remove highly flammable exotics.
- Refer to Habitat Restoration Plan for wildland fire prevention practices.

Paths

Bike trail

- Include an item in the annual budget for on-going path clearing of debris and repair (suggest $2500/year; purchase price of appropriate equipment and equipment maintenance to be determined).
- Research alternative surface materials (and funding).

Foot paths and horse trails

- Develop and follow a recommended drainage plan.
- Maintain separate foot and farm equipment access.
    - Promote revegetation on pedestrian paths above the Sun Pond
    - Repair foot path on grade above Sun Pond
    - Reestablish pedestrian path across former Sun Festival site

- Maintain best practices for reducing erosion on paths used for farm equipment
- Avoid above ground cross-path water flow

Flora and Fauna

- Plan is a long-term commitment that should be implemented in stages.
- Start with "easy" projects such as passive restoration methods.
- Monitor and implement forest management.
- Continue to seek project funding.
- Provide on-going local public information as to the objectives of restoration work.

8.1 Funding

The activities outlined in the general plan for habitat restoration will require the participation of people with a range of skill and equipment – from those who mow or remove large trees to others employing hand tools to pull weeds. We will need consultants, food for volunteers, and funds to purchase plants.

Supporting these activities will require a mix of funding sources: private donations, volunteer participation, use of a BCPUD maintenance budget, engaging agencies such as the Conservation Corps North Bay, and obtaining grant funding from sources such as the Stinson/Bolinas Community Fund, the Coastal Conservancy, and the California Parks Habitat Conservation Fund.

9.0 CONCLUSION

In the last two years, we have learned much about the history and current uses of the lower 40 acres of the land that was purchased as a community resource. We recognize that BCPUD's management of the land is of utmost importance to keep the various uses in some state of harmony. In bringing this plan to the Board, we hope to continue the work that we have begun in order to improve our understanding of the land, seeking staff guidance and Board approval along the way. We are very grateful that the Board voted to expend resources to have an incipient pampas grass invasion reduced. We see that process, making a recommendation with a budget to the Board, having discussed it with staff and moving forward to implementation, as how we envision our continued work on projects related to the land.

The proposed restoration plan is the primary area where we would first like to put our attention in the coming months and years. We have made a number of recommendations for the Board's consideration. A number of them relate to preserving and improving current conditions. The restoration plan moves beyond what is currently in place to take on some bigger challenges. We expect to move slowly, in stages, and to report to the Board and the community regularly. We are looking for sources of funding and may request that the BCPUD support the work.

We hope that you will review carefully and consider the recommendations we have made in this report. We hope that you will agree that the Land Stewardship Committee's work now and in the

future will help the BCPUD to harmonize the habitat that is the land as it is important to walkers, riders, farmers, bird watchers, botanists, animals, and plants.

Thank you for your support of the Land Stewardship Committee.