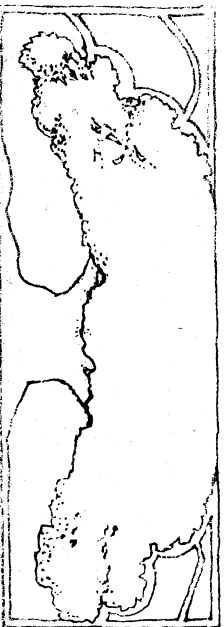


MATTOLE RESTORATION NEWSLETTER



MATTOLE RESTORATION COUNCIL CONVENES

On July 15 of this year, more than 30 residents of the Mattole Valley met in the shade of the historic Council Madrone to consider a set of challenging questions. Could residents and landowners on the Mattole, working together and separately, reverse the degradation of the watershed and begin to restore it to optimum productivity? Could enough trees be planted, enough bare slopes re-seeded, enough instream salmon enhancement work done, enough old roads maintained, and new roads built wisely enough so as to restore the resilience of natural systems here and thus really make a difference in the quality of life on the Mattole?

The answer was a unanimous but tentative "yes." Unanimous because there are a number of examples world-wide which prove that *enough* of this sort of work makes for substantial gains in the balance and productivity of natural systems. The climate of Peking has been changed and improved through tree planting. The province of British Columbia is looking forward to regaining historic populations of salmon within 20 years through the coordinated efforts province-wide of small groups of active residents. The answer was tentative because *enough* is a lot.

There is no doubt that individual landowners can improve the quality of their timber crops, grazing land, and agricultural soils by careful stewardship. But if we are truly aiming at a healing of the systems of natural provision we will be looking for indications of our suc-

MATTOLE RESTORATION COUNCIL STATEMENT OF PURPOSE JULY 15, 1983

OUR CONCERN IS THE ENTIRE MATTOLE WATERSHED. WHAT HAPPENS AT THE HEADWATERS AFFECTS WHAT HAPPENS AT THE MOUTH. THE MATTOLE COMMUNITY INCLUDES PLANT, ANIMAL AND HUMAN COMMUNITIES. THE HEALTH OF INDIVIDUALS WITHIN THESE COMMUNITIES DEPENDS ON THE HEALTH OF THE WHOLE. HUMANS ALONE CAN CONSCIOUSLY HELP TO RESTORE AND MAINTAIN. IT SEEMS TIMELY AND COMPELLING TO BRING TOGETHER GROUPS AND INDIVIDUALS COMMITTED TO A HEALTHY FUTURE FOR THIS WATERSHED. WE FEEL THAT IT IS POSSIBLE TO RESTORE MATTOLE NATURAL SYSTEMS TOWARD OPTIMUM HEALTH AND PRODUCTIVITY.

cess on a larger scale — like the re-stabilization of the river bed.

In order for the river to stabilize itself, more sediment must be flushed from the bed than enters it for quite a few years running. Thus if one land owner stops his erosion and another lets it slide, the best we can hope for is a maintenance of the status quo.

Realistic estimates put the task of restoring the Mattole watershed to something like its former productivity as the work of a generation — a generation of interested, committed and active land owners and residents. While the citizens gathered at the Council Madrone were willing to commit themselves to such a goal, they did not feel they represented a large enough segment of the Mattole community to make it work.

WHY MATTOLE RESTORATION COUNCIL?

To anyone who is still here after the last two winters, it is apparent that something should be done to protect ourselves. Not only is the survival of the salmon at stake, but also our ability to keep our houses level and out of the river, and our roads open to get to them.

Not only have hundreds of slides, some monumental in size, filled in pools in whole sections of the river, but some homesteads have been rendered unlivable; more prime bottomland has been lost; constant road washouts have put serious strains on ranch operations. Public and private roads, communications, and power supply are all increasingly vulnerable and costly to maintain. Unless steps are taken to keep the soil on the slopes, there is little but blind luck standing between us and "acts of God" on a regular basis.

The first step, and perhaps the most difficult, is to believe that the actions of the few people living in the Mattole Valley can make a difference. Growing conviction that watershed-wide efforts to restore and maintain

Continued p. 4

Wider discussion and more counsel was called for. The inevitable public meetings were suggested.

The name "Mattole Restoration Council" was adopted, as was a statement of purpose. (See box.) A committee of volunteers was formed to work up the paper that you hold in your hands. It has been mailed to boxholders in Whitehorn, Honeydew and Petroia, and to as many landowners as we had addresses for at this time.

What do you think? Can we take it on? The answer depends, in large part, on how many of you respond. Please take the trouble to fill out the response form in these pages and mail it. Ten minutes of your time and a twenty cent stamp can put you one step closer to a healthy and productive watershed.

COASTAL HEADWATERS ASSOCIATION TO START REHAB WORK

Coastal Headwaters Association (CHA) will begin work on six top priority rehabilitation sites in the Mattole drainage this fall and winter. Projects include rip-rapping along the county road upstream of Whitehorn; tree planting and road stabilization on Eubanks Creek; culvert improvement on Painter Creek and High Prairie Creek; logjam removal and tree planting on Painter Creek and High Prairie Creek; logjam removal and tree planting on Big Finley Creek; and barrier modification and seed collection and dispersal on the Upper North Fork.

All work is subject to landowner approval and will be performed by local workers. Funding for these projects has been secured through a contract with the Coastal Conservancy by the Redwood Community Action Agency. CHA will sub-contract for the latter group. Local residents interested in participating should contact CHA as soon as possible.

Coastal Headwaters Association is a non-profit community group based in Whitehorn, near the headwaters of the Mattole. For the past two years, CHA has sponsored a stream survey program for fisheries and habitat improvement in the Mattole watershed. CHA's approach is to involve concerned Mattole Valley residents in this effort, providing important educational and

ROAD ASSOCIATIONS CAN BE FORCE FOR RESTORATION

This past year the people on Dutyville Road formed an incorporated road association. The original impetus for this was the need to replace two bridges on their road. Forming the association has been a tremendous educational process for all those involved. We have learned a lot about the effect of our roads on the watershed and also the legal and practical details of setting up a road association.

Many of us moved up here because we had a concern for our environment. We now realize that our watershed has been severely mistreated and the roads which make it possible for us to live here can cause further deterioration of our watershed.

The ditches along side roads collect and concentrate water. As the volume of water increases, the erosive power increases exponentially. The ditch or culvert can then dump the water in an unnatural drainage, causing severe erosion. The silt and topsoil so badly needed on our slopes ends up in the streams destroying fish habitat.

One of the major jobs for each local road association is to study natural drainage patterns as compared to drainage patterns caused by roads. Roads need to be designed to minimize the concentration of water and reduce the erosive power of water as it is removed from the road, and if possible, place the water back into a natural drainage. Roads need to be sufficiently rocked to prevent wearing through to the soft soil. There are many

MATTOLE WATERSHED TAXPAYERS ASSOCIATION STEWARDS FOR MATTOLE CANYON CREEK

Evolving from growing concerns and the need for restoration and preservation of the watersheds, the Mattole Watershed Taxpayers Association was incorporated with non-profit status in 1978. It's primary purpose is to provide community oriented watershed management for Mattole Canyon and surrounding creeks, stream rehabilitation, erosion control and environmental education.

The MWTA was active in assuring the removal of Gilham Butte from the BLM timber base in 1980 and continues to monitor the remaining public lands in the area.

With the help of the California Conservation Corps the MWTA was instrumental in the hand collection and dispersal of native vegetation for use in streambank and landslide stabilization. An interest in riparian habitat and fisheries restoration continues. Community members have planted willow and alder, sub-clover and annual grass in critical areas in an attempt to slow the

part-time employment opportunities in the process. The first two years of the program were funded by state monies made available for Northcoast salmon and steelhead restoration.

Since 1981, about two dozen local residents up and down the watershed have worked part-time for the stream survey program. Surveyors work in and near the areas where they live. Permission for access is obtained from landowners before the surveys are conducted.

So far, over 250 miles of streams in the Mattole have been walked and described, yielding important up-to-date information on salmon and steelhead population levels, stream habitat conditions, and areas needing restoration or improvement. California Conservation Corps work crews, acting on recommendations from project surveyors, have already opened up nine miles of streams by removing logjams and have seeded 345 acres of barren or eroding land.

A 58-page report has been prepared which describes in detail the activities and accomplishments of local citizen involvement in stream surveys and habitat improvement. This report is available for a \$4.00 donation (covers printing and postage) from: CHA, Box 12 Whitehorn, CA 95489, or CHA c/o Claire Trower, 3848 Wilder Ridge Rd., Garberville, CA 95440. (Phone 707-986-7688).

Gary Peterson

techniques to reduce erosion at each outfall: using culvert extensions, the hand placement of medium sized rocks, the building of hog wire and rock catchments, the use of old tire casings, to name a few. Each site needs to be individually evaluated.

A well designed road that is properly constructed and heavily rocked can provide good year-round access with minimal maintenance and minimal damage to the environment.

Historically, in our area, one or two people on a road have taken responsibility for getting roadwork done each year. The decisions they have made on what to do to the road may not have been acceptable to all the neighborhood, or perhaps were environmentally unsound. A well organized road association can be a legal and fair way to decide each year what to do on the roads and how to pay for the work and assure that the work gets done at the right time of year.

We see the potential for local road associations to be powerful forces in the restoration of the Mattole Valley watershed.

In the next issue we will discuss the mechanics of setting up a road association: community meetings, potential bylaws, researching land ownership, equitable fee schedules, voting rights, etc.

Interested people can contact the Dutyville Association (Box 114, Garberville CA 95440) directly with questions.

Jane A'hearn and Jeff Moroso

accelerating erosion in the Mattole Canyon Creek drainage. When a suitable location and the feasibility of a fish hatchery box is determined, it will be installed and maintained by members. Each year nursery seedlings are ordered in quantity for reforestation. Complete maps of our watershed with corresponding air photos are being compiled to provide basic information for the sensitive land we inhabit. The maps will be an invaluable tool for overall watershed planning, management and decision making.

Educational and fundraising activities are ongoing. Most recently, the MWTA sponsored a workshop and field trip with a hydrologist and a hike down the creek which increased our understanding of watershed dynamics. In addition to yearly dues the MWTA sponsors an eggroll booth at the Summer Arts Festival to raise funds and cover organizational costs.

In the hope of restoring peace to this land we look forward to being a part of the network in the Mattole River drainage.

Gil Gregori

RESPONSE FORM

This newsletter can be published twice a year and distributed to everyone in the Mattole watershed for a cost of about \$1,000 per year. This price seems reasonable enough if you can see the Mattole Restoration Newsletter as an effective vehicle for linking up more and more people active in the actual work of erosion control and salmon enhancement. Maybe we can snowball this thing. The cost of this issue was drawn from the perpetually anemic budgets of the local working groups involved. If we are to go on with the newsletter as well as the hands-on work, other sources of funding must be found. To this end, we are seeking your support and pledges of contributions.

Name _____

Address _____

I consider ongoing restoration work and a newsletter about it so valuable that I am willing to pledge my support at the rate of \$ _____ per year.

I want to be on your mailing list for organizational meetings, work parties, and workshops.

I would like to consult with someone from the Mattole Restoration Council about erosion control work on my land.

Send to: *Mattole Restoration Council*
c/o Trower
3848 Wilder Ridge Rd.
Garberville, CA 95440

JEFFERSON LAND TRUST LOOKS TO THE FUTURE

The Jefferson Land Trust is a nonprofit, tax exempt corporation organized to conserve land in the Mattole River Watershed and surrounding areas. The purpose of the Land Trust is to conserve natural resources including soil fertility, water cycling and supply, fish and wildlife habitat, forest and open lands. In addition, the Land Trust seeks to educate the public in the principles of conservation and ecologically sound land-use management, and to promote nonconsumptive recreation. Preservation of spiritual and aesthetic values of the land in the Mattole River completes the overall goals of the Land Trust.

Unlike other watershed groups, the Land Trust is designed to hold land and interests in land as its primary method of accomplishing these purposes. The Land Trust was conceived as a vehicle to aid landowners in preserving their own land, not only during their ownership or lifetime, but in perpetuity.

One mechanism available to the Land Trust is Conservation Easements. Conservation Easements are specific land-use rights donated to the Jefferson Land Trust, restricting title to the land. These Easements do not interfere with the owner's right to sell, bequeath, or otherwise use and enjoy his/her land, but they do restrict specific uses of the land, such as clearcutting, subdivision, or water diversions. Conservation Easements run in perpetuity, regardless of the ownership of the property. As such, Conservation Easements are long range land-use planning tools which have been used in other areas to preserve agricultural land, open space and historic buildings.

The donation of Conservation Easements to the Jefferson Land Trust is a way in which landowners can insure that their goals of ecologically-sound land management will be carried out in the future, even in their absence.

More information about the Jefferson Land Trust can be obtained by writing to the Land Trust at P.O. Box 321, Garberville CA 95440. Mary/ee Byrtheriver is the secretary/treasurer of the Land Trust, which is run by a Board of Directors made up of a wide range of different type of people interested in land use in the Mattole River area.

Mary/ee Byrtheriver

ALMON GROUP BUCKS EL NINO IN QUEST FOR EGGS

For the fourth year in succession, the Mattole Watershed Salmon Support Group (MWSSG) will set traps in the Mattole in an attempt to capture native king salmon in order to incubate their eggs in streamside hatchboxes. Since trapping is only done at relatively low waters and the traps are pulled when the river rises, and since most spawning fish run during high flows, egg capture has always been a matter of long hours and good luck. This year, however, the warm ocean waters of El Nino have reduced the feed available to homing salmon and offshore catches have dwindled to 25% of last year's catch.

Whether or not these figures will hold for the escapement into the river is a matter for speculation, but it seems likely that the Salmon Group will need to work harder for their eggs this season. On the positive side, each egg captured and incubated will be all the more essential a boost to the survival of native Mattole kings.

Streamside hatchboxes imitate an ideal spawning situation in nature. Clean, sized gravel is layered with fertilized eggs in a redwood box and cold, filtered water is kept flowing through it for up to 60 days. This technique can result in an egg-to-fry survival rate of up to 90% — compared to 10-15% in a highly impacted river like the Mattole.

Last year, MWSSG released 15,000 native king salmon fry and 10,000 yearling silver salmon, the latter raised from Noyo River eggs at their Mill Creek hatchbox and rearing pond site. Three thousand more silver salmon are being raised to yearling size at Mill Creek for

release next spring.

In addition to their salmon enhancement work, MWSSG has contracted to begin rehabilitation of some tributaries of Mill Creek, with tree planting, seed dispersal, and some instream improvements under the direction of Randy Stenler and Jan Morrison. The objective of the work is to increase the amount of spawning gravel available to returning silver salmon.

MWSSG's operating budget this year is \$30,300. Seventeen thousand four hundred dollars have been secured at this point in contracts with the Department of Fish and Game and Coastal Conservancy, and through grants from the Lytle and Tides Foundations — a shortfall of \$12,900. Remembering the generosity of the Mattole community in past seasons, the Salmon Group hopes to make up a good deal of the difference through local donations and benefits. MWSSG, P. O. Box 188, Petrolia CA 95558. (707) 629-3514.

Linn House

MILL CREEK ASSOCIATION SEEKS TO ESTABLISH BILL CLOW MEMORIAL FOREST

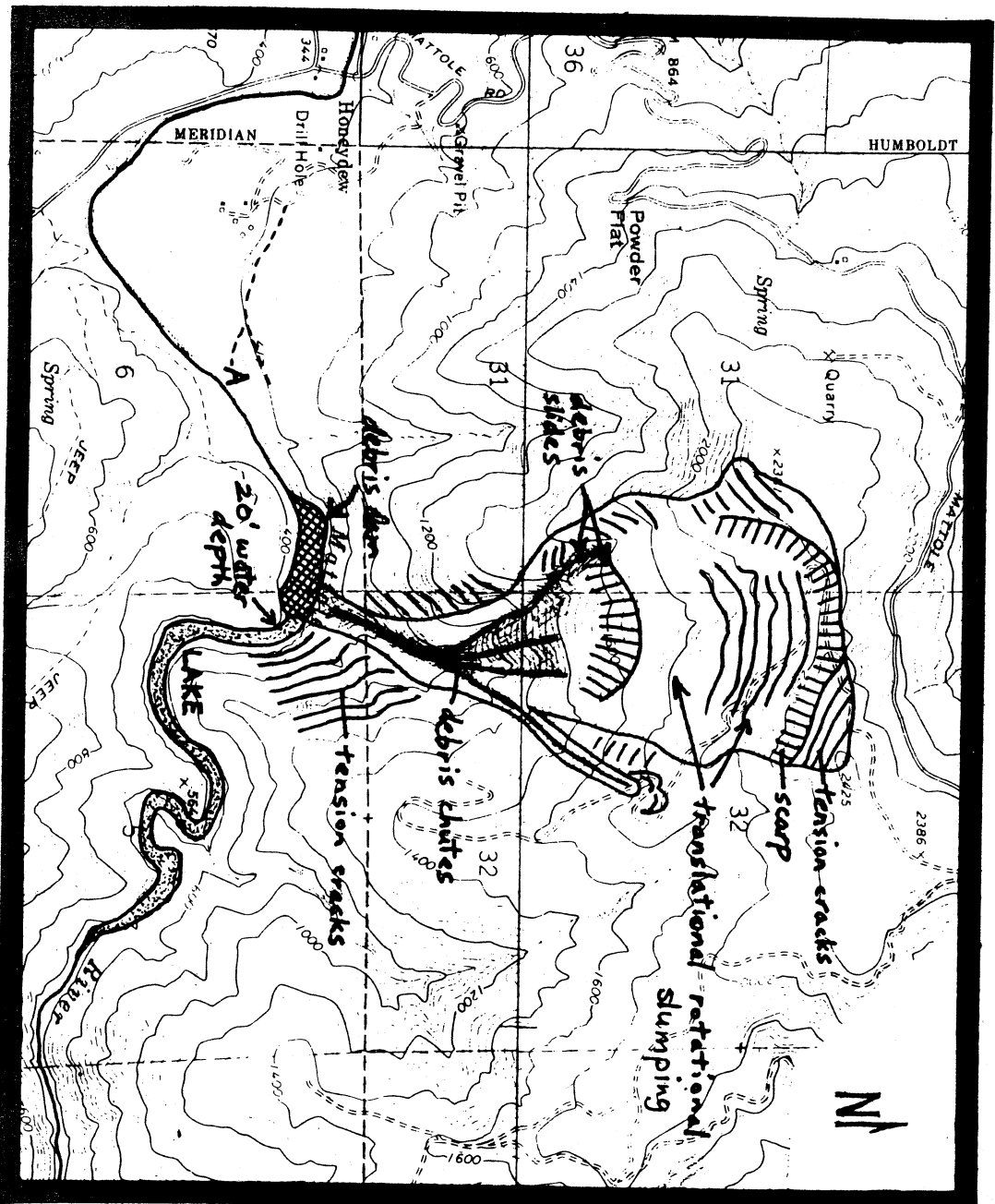
The Mill Creek Association has raised pledges of more than \$25,000 toward the purchase of one of the last stands of old-growth douglas fir and tanoak forests in the lower Mattole basin. This effort has coalesced around the desire of neighbors, friends and family to commemorate the life of Bill Clow (1946-1983) and

One potential plan of action is to capture adult fish below the slide and transport them upstream by truck or helicopter airlift.

Plans are being based on a status report, recently prepared by Jerry Kregar, geologist for CHA, and Gary Peterson, fisheries biologist for the Mattole Salmon Group. The following notes are gleaned from this report.

The total land area of the slide is about 375 acres. It is a mile long from ridgetop to river and averages about ½ mile wide. It is allegedly the second largest slide to occur in California last year.

Although the massive movement occurred early in April of 1983, it is apparent from older aerial photos that severe gulying and some slide activity began here about 15 years ago. By 1974, the upper 50 acres of the



his dedication to the natural environment. The 215 acre forest, on the lower end of Mill Creek, was a familiar place to Bill, a place where he and his wife, Lynn, had often walked, and where Bill had made an inventory of bird species, finding, among others, pileated woodpeckers, spotted owls, and a pair of nesting golden eagles. The parcel contains many douglas fir trees 6 to 8 feet in diameter and over 190 feet tall. Two cascading waterfalls, 60 to 250 feet high, with their fern covered canyons add to the beauty and interest of the forest.

The Mill Creek Watershed Association is made up of neighbors in the Mill Creek area and friends of Bill Clow. They are endeavoring to raise money and purchase the parcel from its present owner, Eel River Sawmills. The Humboldt North Coast Land Trust (HNCLT), a non-profit organization with compatible goals, has agreed to be a repository for funds and pledges, and to assist in negotiations with the owner.

The initial goal of the association is to obtain pledges and gifts of \$125,000 to be in a position to open negotiations. If no purchase agreement is reached, or if funds raised are insufficient to meet the purchase price within a year, all gifts and pledges will be returned. Contributions and/or pledges should be made out to HNCLT and designated for the Bill Clow Memorial Fund. The address is P. O. Box 457, Trinidad CA 95570. Those interested in more details or with knowledge of possible donors should contact Rex Rathbun, Box 9, Petrolia CA 95558. (707) 629-3369.

Rex Rathbun

HONEYDEW SLIDE MAY POSE THREAT TO SPAWNERS

slide was beginning to slip. This past winter's extreme rainfall, however, finally broke the whole mountain loose.

In late March and early April some 20 acres of soil, rock and trees slipped from the lower portion of the slope, cut a debris chute through a five acre flat, and entered and dammed the Mattole River, forming a lake 20 to 25 feet deep at the dam and about 1½ miles long. The dam appears quite stable as it contains many room-sized boulders. There is a narrow, steep rapids below the dam for about ½ mile.

On the upper and lateral portions of the slide, tension cracks from ½ to 3 feet wide, accompanied by 10 to 50 feet of downslope movement have toppled large trees and destroyed access roads and three houses. The upper portion of the slide will continue to fail because of the loss of foundation previously provided by the lower slopes. The Honeydew Slide will remain relatively dormant until reactivated by heavy rains and/or earthquake activity.

If the slide does not dam the river again, adult salmon and steelhead will probably be able to migrate over the slide area. However, during high flows, the upstream passage of fish may be hindered by excessive water velocities and turbulence in the narrow, steep channel below the dam. King salmon, generally considered to be less vigorous swimmers and leapers than either silver salmon or steelhead, are the species most likely to be affected.

The area upstream of the slide (about 100 miles of accessible river and stream habitat) contains the highest quality and most heavily utilized spawning and rearing areas remaining in the entire Mattole watershed. Most silver salmon and nearly all king salmon spawn above the slide, although Honeydew and Squaw Creeks provide some high quality habitat below it.

If a higher dam is formed at the slide, upstream fish passage will most likely be blocked. This would cut off the upper half of the Mattole from fish production, decimating native runs of king and silver salmon. It appears that the fisheries implications of the Honeydew slide have been overlooked or ignored by the various government agencies involved in assessing the hazards of the slide. The potential for irreparable harm to the Mattole fisheries is so great that we simply cannot afford to adopt a "wait and see" attitude.

Gary Peterson

WHY MATTOLE RESTORATION COUNCIL?

the health and productivity of Mattole lands might succeed is based on a number of factors.

1. Eighty five percent of Mattole lands are privately owned. This allows for the possibility of cost-effective direct action in small increments by the people who have the most at stake.
2. There is increasing awareness among Mattole property owners small and large that there are steps they can take which positively affect the future of their land. Logging practices are improving where property owners recognize their responsibility toward their own future. Road building and maintenance is just beginning to develop into the art it must become to avoid the damage associated with roads in the past. Trees are being planted and gullies are being plugged.
3. New revenues for rehabilitation and implementation of sound forest and rangeland use are becoming available as public and private agencies realize the social and economic benefits to the entire public resulting from work of this kind.
4. Groups of residents working in the Mattole for

GOOD ROADS AND BRUSHY SLOPES MAKE FOR STRONG SALMON RUNS

In the past, everyone blamed the loggers for all the erosion and consequent muddy waters in the Mattole. Today it is a different story. Now, it is "our" roads and bare land that are killing the fish. It is only fair to point out that this area has high natural rates of erosion. Erosion was here first, but we have accelerated the process. In fact, the Mattole River watershed has some of the highest rates of erosion anywhere in all of North America. Soft, erodable soils and large amounts of rain make for lots of erosion. So where do we fit in?

Well, you take a naturally erosive area and impact it severely. Then what you end up with is severe erosion and a dying Mattole salmon fishery. The impacts have been severe and extensive.

In the process of logging and subdividing, many roads were built and cat roads cut everywhere across the landscape. Deforestation causes increased runoff of rainfall, but the roads do the major damages. It has been estimated that up to 70% of erosion is caused by roads and road building. Logging of large blocks of land in short time spans increases runoff. Roads concentrate this runoff into roadside ditches, directing this through undersized culverts, and eroding the downslope areas. When you double the velocity, or double the volume of runoff, then you increase the erosive force to the 64th power. It is mind-boggling.

So ultimately, if we are trying to slow down erosion, then we must decrease the volume and the velocity of runoff. There are many things that we can do to try to correct this situation. Perhaps if we try just a little, we can turn this century of carelessness around. We can put a little back into this land that gives so much.

WHAT CAN WE DO?

1. We can revegetate and reforest all the bare and eroding areas on our land! This will help slow down the volume of runoff. Conifers should be planted on all stable, unstocked timber growing lands. In the Mattole, much of these lands are what you would call "stump" meadows. The stumps are an indicator of forest soils and make good shade protectors for young douglas firs to be planted behind. Plant your young douglas fir trees on the northeast side of stumps and logs and then lay bark mulch around their base to hold moisture. Douglas firs need partial shade to survive the hot dry summer.

The rest of your *open* stump meadow lands can be planted with ponderosa pines. Plant in 10'x10' spacings. Let them grow for seven to 10 years and then begin thinning for firewood, planting new young douglas trees underneath in the shade. So the pines are a cover crop for the douglas firs, which are native.

Brushy species should be planted on bare, eroding, and *unstable* lands. August and September are good months to collect *Ceanothus*. Blue Blossom and White-

the past few years have acquired some experience and expertise in restoration techniques. We have begun to sort out what works and what doesn't. Groups working in various parts of the valley have begun to understand how their work interrelates and overlaps and to feel the need for a plan which encompasses the watershed.

The desire for a functioning watershed-wide council comes first from people working in these groups because of their reluctance to make decisions which affect the whole valley without larger council. A council would be dedicated to watershed-wide rehabilitation and to the accomplishment in increments of that work. Individual landowners who wish to make restoration efforts on their own lands could draw assistance from such a council in planning, implementing, and figuring out how to pay for the work.

A council could also take on the job of educating ourselves in rehabilitation and alternative management techniques. The need for coordination of landowner inspired restoration work and management decisions could be served by such a council. A council could also serve as an effective vehicle for influencing land use decisions

thorn (types of *ceanothus*) seeds can be collected once you hear them popping. Collect the seeds into paper bags and store in a cool, dry place. Come the rains in November, preheat your oven to 220 degrees F. Spread the seeds in a thin layer across a cookie sheet and place in oven for 5 minutes.

Remove and spread the seeds. Broadcast across the top of eroding bare land. The rain will spread the seed down slope. *Ceanothus* also fixes nitrogen in the soil. Another good brush species is *Baccharis*. Known locally as greasewood or coyote brush, it fluffs up with white downy seed from November through January. Collect into sacks and spread over slopes. No treatments necessary. This plant will also start from cuttings buried $\frac{3}{4}$ of the way in the ground.

Alder seed can also be collected in the fall and grown into seedlings or just spread along wet, eroding areas along creeks.

So these are a few vegetation tips. Now all we have to do is get busy. It isn't very hard to do and we will be helping the fish tremendously in the process. Time is running out, so we should get started soon. Our children will thank us for this.

2. We can get (a) our roads into better shape (b) put unused roads to bed, and (c) build new roads adequately. This is a large area of work and I will touch briefly on some of the important points. Future articles will touch on these points in a more in-depth way.

2. (a). Existing roads. Many problems are caused by the absence of culverts or by undersized culverts. With 100 to 200 inches of rain each year, the number and size of culverts becomes a critical factor. Culverts should be steel, not aluminum, so as to last for a long time, even with rocks tumbling through. They should also be oversized in order to handle even the biggest floods. All ditches flowing water in the winter should be culverted so as to deconcentrate the flows. Lack of culverts concentrates runoff and increases the erosive forces. If the culvert outlet is on steep ground or close to the road edge, then a downspout should be installed to deliver the water to a gentler, stabler point. Sheets of tin roofing can be used and cabled to the end of the culvert. Wrap it in a half-circle shape and support along the sides every five to six feet with metal fence posts and wire. At the end of this downspout and below the culvert outfalls, an energy dissipator should be constructed of rocks or wood. This energy dissipator should be designed to catch the outfall and break up the force of the water before it gurgles its way downslope. The energy dissipator must also be securely held in place.

If you are going to be around all winter, then trash racks are good to install at culvert intakes. This can be done using scrap redwood. Build an open box with wide-

made outside the watershed which affect the future of the Mattole.

Finally, it is comforting to envision what benefits might result from watershed-wide restoration work (and wise maintenance of private lands). If you can, imagine starting from the ridgetops and headwaters . . . planting trees and grasses for slope stability and future timber . . . as roads get built and maintained so that erosion slows rather than increases. The river gradually flushes itself and stabilizes. Vegetation begins to seal it in a cooling shade again. Work in salmon enhancement begins to pay in visible increases in spawning runs. Silt washed off the upland slopes begins to deposit itself permanently in rich alluvial flats. Grains and vegetables grow in soil that was formerly swept to sea.

A generation from now, our children reap a harvest not only of fine timber, abundant fish, productive grasslands and rich and varied plant and animal communities — but also a tradition which will assure the same harvest for their children.

David Simpson & Linn House

ly spaced slats on three sides and top. Size the box (trash rack) to each individual culvert and place it over and in front of the opening. This trash rack will prevent a culvert from plugging with branches, leaves, soil and rock. When the rack clogs up it takes five minutes to clean. If a culvert plugs it takes one to two hours, if you are lucky, to get it open again, IF AT ALL. Please note: trash racks are only for roads receiving extensive winter maintenance patrols. You must go clean them in the middle of big storms.

It is also very important to be out on the roads come the first winter rains. These first rains flush the leaf fall from the ditches and can cause many plugged culverts. Small water bars can also be etched into the road with pick and shovel to get the water off the road surface. Industrious persons could also use old burlap or old soil bags and clean all the leaves out of the ditches before the rains. There are lots of acorns in this leaf mulch and the bags of leaves and acorns can be spread out on bare soil areas for erosion control. Cleaning ditches and mulching slopes at the same time!

- 2 (b). Put ROADS TO BED. Old unused roads should be put to bed. Backhoes and extendshoes can pull sidecast materials upslope to fill the cut bank and cats can outslope old road beds. A ripper attachment can also be placed on the back of a cat to de-compact hard road bed surfaces. Then all these bare soil areas can be seeded with rye and mulched heavily with straw. Trees and brush can also be planted.

- 2 (c). ON NEW ROADS. Before building any new roads an erosion control specialist with road building knowledge and experience should be consulted. Some sections of road should be outslopped so that all runoff sheets off in minor amounts. Some sections will need to be insloped (sloped into the hill) with an inboard ditch. Oversized culverts, downspouts, and maybe trash racks. Areas of land with instabilities will need to be avoided.

For a minor consultation fee, one can have a well designed road, thus avoiding the endless yearly costs of maintaining a poorly designed and constructed road. At the same time, we will be helping the salmon.

So let's get with it. Mother Nature is giving us everything at once—just start somewhere, and before you know it little trees will be growing everywhere. When you are out walking your trails this next month, collect some Whitethorn seed and spread it this winter.

The Fish thank you !

Steven (Sun Gnome) Brewer
Erosion control & road building consultant
Box 724
Blue Lake, CA 95525
707-668-5727