

# ECOLOGY

*Prosperous Life*

and

*Quality Life*

for all creatures

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# Ecology

## The Greening of Civilization

### Preface

- I think we can all agree to wanting a green, beautiful, healthy and sustainable planet. The question is defining the Problems and Solutions accurately void of deceit and political emotion.
- What will give us the best of our technologies and the best of the natural spaces needed to sustain a healthy planet and feed the natural needs of the soul ?
- How can we have both without one diminishing the other ?

### Goal

- The highest level of wildlife health.
- The greatest variety of native wildlife.
- Human intrusion with the smallest footprint.
- No constant maintenance of wild spaces.

### Basic Rules

- Rule #1** • Create the greatest variety of conditions.
- Rule #2** • Create edges.
- Rule #3** • Make human intrusions and structures easy to maintain and erase.

### Myths and Deceptions

- This section can be a bit upsetting for some readers because of the emotional investment many have in the issues involved, but if we are going to address perceived problems we need to start by logically facing the science of the issues.
- We need to start a reasoned Ecological discussion by confronting the "Information Tyranny" that much of the Eco-Movement has dropped on us for many years.
- Their deceit has been based on "The End Justifies the Means" and that nonsense has harmed the credibility of the efforts

in ways that will take a lot of reasoned discussion to repair,

- The issue of the Ecology is important to our quality of Life and the health of our future and the future of the Planet and so we begin with the common beliefs, myths and deceptions and move from there into Viable Solutions and the Science that gets us there.

### **Spotted Owl**

- The Spotted Owl was the symbol for the anti-forestry movement. It was all about not cutting the Old Growth.
- The problem was that Spotted Owls don't live in Old Growth. Old Growth forests are mature and dark and new seed bearing plants do not find a place there. Without seed bearing plants, there are no mice and thus no Owls.
- It was Symbolism without substance and when it was exposed, as it eventually always does, the message itself lost credibility.

### **The Amazon is Being Cut Down**

- It turns out that the Amazon keeps its nutrients in its plant life and not in its soil so when you cut the jungle down you have sand left.
- In studying these soils a lot of corn debris was found that led to the understanding that before the great human die-off in the 1200's the people of that area had intensively farmed about 3/4 of what is now the Amazon Jungle.
- They were very smart about it. They would cut a small meadow out of the forest and then they would scoop up floating aquatic plant debris and cover the meadow with it to create fertility.
- Today's practice is to burn the undergrowth, cut the trees down and leave what remains to fend for itself.

### **The Temperate Rain Forests are Disappearing**

- There is a diminishing Temperate Rain Forest on the West Coast of Canada.
- The Temperate Rain Forest in Ireland is already gone for several hundred years.
- There is plant life in such forests that are found nowhere else.

## Forests are the Lungs of the Earth

- We were all taught that animals breathe out Carbon Dioxide and Plants breathe out Oxygen and there results a perfect symbiotic circle is created. It was a nice clean simple lovely model but it turns out that is totally false.
- A forest only has a net production of Oxygen when it is relatively young and growing. Once it is more mature the Oxygen absorption of rotting balances the Oxygen production of growth the net effect approaches zero.
- Slightly more than 90% of all plant life lives in the Ocean so if all the plants on land disappeared, it would only be a 10% loss, not enough to effect the Oxygen content in the air.
- When scientists explored this, they found that Oxygen was being released INORGANICALLY from the surface of the ocean by sunlight hitting the surface and using salt as a catalyst so plants were not responsible for the earth's atmospheric Oxygen at all.

## Running Out of Oil

- Back in the 1970s it was said that we would run out of oil within 40 years.
- When the price of oil went up, more profit was available to oil companies with which to explore.
- Now slightly over 2000 years of oil has been discovered Some of it is quite deep and expensive to drill with today's technology, but technology is changing very quickly.

## Ozone Hole

- The hole gets smaller in the Summer when there is 24 hours of sun.
- The hole gets larger in the Winter when the sun stays down.
- The animals in the South Pole are genetically adapted to the low Ozone levels

## Global Warming

- The deep Space temperature around the earth is 250°F below zero. 54% of the heat you feel comes from the sun. 46% comes from deep inside the earth (the center of the earth is as hot as the surface of the sun).



### **Computer Model**

- It turns out that the computer "Cloud Model" used was false.  
Once corrected, the warming tendency disappears.

### **The Polar Ice is Melting**

- A huge 1200 mile long volcanic fissure opened up near the North Pole and was active for several years.  
An expedition was launched and new species were discovered.

### **Glaciers are Receding**

- There are some 75 volcanic events occurring in the oceans at any one time.  
Recently the land had been cooling and the oceans had been warming.
- As a result Glaciers near the coast or within the effect of on-coast air flows were reseeding while other Glaciers away from ocean effect were growing.

### **Ice is Breaking off Antarctica**

- The snowfall increased so much in Antarctica that the weight of all that snow coupled with the slight warming of the ocean water were resulting in break-offs.

### **The Gulf Stream Could Shut Down**

- The story goes that the melting of Northern ice would cause a layer of cold fresh water to sit on top of the Gulf Stream water heading down toward Spain.  
This would shut down or greatly decrease the flow of the Gulf stream causing England to go into a deep freeze.
- If the Gulf Stream were to decrease, there would be less warm water heading north resulting in an increase in ice to the north and no cold fresh water on top of the Gulf Stream.

### **Polar Bears are Dying Off**

- According to Canadian researchers the Polar Bear population is at a 30 year high such that the bears are wandering on land far more than they used to and there has been a dramatic increase in Bear cannibalism.

### **Methane Levels**

- Cows were blamed for Methane but 90% of all Methane release is by TERMITES.

### **Carbon Footprint**

#### **CO<sub>2</sub> Levels**

- The atmosphere is composed of about ....

- 78% Nitrogen
  - 21% Oxygen
  - 0.026 - 0.039% Carbon Dioxide ( depending on altitude and urban/factory proximity )
- That is less than **one four hundredth of one percent** Carbon Dioxide or less than 250-400 parts per million.
  - The level is lower as you gain altitude.
  - It is so low because Carbon Dioxide is a heavy molecule and thus stays very close to the surface where it is readily absorbed by plants.

### **Fires**

- There are 1200 to 1400 wild fires in North America every year; most of them fairly small.
- If you take the average of just ONE of these fires, it has roughly the same carbon footprint of all human activity in North America for one year. That is all the cars, planes, factories and homes .... one year.

### examples :

1. When the volcano in Iceland erupted  
it has a Carbon Footprint equal to the entire Industrial Revolution since its beginning.
  2. When Mount Pinatubo in the Philippines blew  
it put the equivalent of 400 years of human pollution into the air in two hours.
  3. There are some 1200 to 1300 Wild fires in North America every year.  
One average of these fires has a Carbon Footprint  
equal to all the vehicles in North America traveling for one year.
- Some scientists looking at ice cores have concluded that there is less CO<sub>2</sub> in older core samples and further conclude that it is proof that CO<sub>2</sub> levels are increasing, but they forget that ice contains a small amount of single celled bacteria which, being plant based, consumes CO<sub>2</sub> albeit very very slowly based on the scarcity of such single celled organisms in the sample and also based on the low temperatures thus low cellular activity in the sample.
  - Some scientists also used 6 trees as a test sample to make the CO<sub>2</sub> argument which is just not an adequate sample size which should at least be the statistical "T" of 29 samples.

### Pollution is Poisoning the Planet

- When Mount Pinatubo in the Philippines erupted  
it blew for one year. In the first two hours (the biggest part of the eruption )  
it spewed the entire Periodic Table into the air  
equivalent to 400 years of human pollution.
- That is not to say that we should not clean up after ourselves.  
In the Economics booklet it is suggested  
that recycling and disposal should be part of a product's price

### Animals are Going Extinct

- Dr Diana Fisher, of the University of Queensland, Australia,  
compiled a list of all mammals declared extinct since the 16th century  
or which were flagged up as missing in scientific papers.  
"We identified 187 mammal species that have been missing since 1500,"  
she wrote in the journal Proceedings of the Royal Society B.
- "In the complete data-set, 67 species that were once missing  
have been rediscovered."
- "More than a third of mammal species  
that have been classified as extinct or possibly extinct, or flagged as missing,  
have been rediscovered."

- Mammals that suffered from loss of habitat were the most likely to have been declared extinct and then rediscovered, she said.
- Species spread out over larger areas were also more likely to be wrongly classified as extinct. The mistakes cannot be blamed on primitive technology or old fashioned scientific methods.
- "Mammals missing in the 20th century were nearly three times as likely to be rediscovered as those that disappeared in the 19th century," Dr Fisher added.

## The Oceans are Dying

- Rather than responsibly harvesting the oceans, we have been "clear cutting" the oceans of life and using it as a dumping ground and it is starting to show.

### Drift Netting

- North Korea is still laying out hundreds of miles of drift nets and taking everything. Many nets are also lost and floating free in the ocean. This is very damaging to life in the water column and needs to be stopped under the umbrella of International security.

### Drag Netting

- Reduces the variety of species by greatly disturbing and in many cases destroying the ecosystem structures of the ocean floor.

### Dumping Toxins

- Organic toxins are readily broken down in the Ocean but can increase diseases.
- Non-Organic Toxins such as Lead or Mercury remain a long term problem.
- Radioactive materials dumping is extremely dangerous to all life in the oceans and poses an extremely long-term threat to the health of the oceans.

## Farming

- Cutting down forests to farm or plowing wild grasslands to farm or altering grasslands to ranching alter the ecosystem more than any other human activities.
- Be sure to give back more than you take by creating a variety of advantages for wildlife nearby.

## Field Sizes

### Woodland Fields

- Farming in woodland areas should restrict field sizes so they are more like large meadows naturally found in such areas.
- In the winter the center of such fields should be tall grass in the middle to create winter shelter for Upland Birds without creating a fire hazard for nearby woods.

### Prairie fields

- These are much larger fields but should have HEDGE ROWS for wind-Breaks to reduce wind erosion and provide shelter for mouse eating predators and provide an adequate areas for native plants to flourish so that native insect will tend toward the familiar native plants rather than be drawn to the crops that would then require lots of pesticide which in turn kills not only the insects but the predators that naturally control them.

## Water Features

- Land that is close to water bodies should never be disturbed/farmed/logged other than walking/biking paths.
- Farming runoff can turn fast moving, clear, well oxygenated rivers and streams into slow turbid dirty empty waters.

## Ranching

### Goats

- When you do a Google-Earth fly-over of central Asia or parts of Africa you can often see the borders between countries due to goat herding on one side and none on the other.
- Goats, have both an upper and lower set of teeth while sheep have only an upper set. Sheep eating habits crop grass and create and maintain a nice dense field of grass. Goats do not maintain their environment and instead create a sandy rocky landscape by pulling plants up by the roots and chewing the bark of small bushes.
- When you talk to the people from these areas, they love their goats. It is part of their culture.

What if you could create a goat that was extremely nice looking and tastes really better than their typical goat choices so they want one for the pride of ownership, but make that goat with only an upper set of teeth ?

## Cattle

- Cattle are great.  
They build the fertility of the land rather than taking from it as do goats.
- Their poop is a 1-1-1 slow release fertilizer.  
It does not burn the plants and releases very slowly over a year or two or three depending on the amount of rain.
- They are a perfect animal for taking marginal land and making it a lot more fertile
- They are a great source of meat and milk and leather.  
They are generally non-aggressive and easy to control.  
The problem for many people in the world is that they are expensive to buy.  
This is why cattle are often considered a measure of wealth.
- If you are a marginally poor family in Africa  
your wealth building generally starts chickens  
and with that income you buy some goats.  
You then eventually sell a lot of goats and buy a cow.
- A cow is 1000-1500 lbs in weight.  
so having several so you can breed them is quite an undertaking that requires a fair amount of land.
- What if they had access to very small cattle  
such that they could easily build a small pen for several of them  
and they easily have several cows to breed.  
Then a marginal family could raise cattle as easily as goats  
with a far better result for them and their environment.
- Such a cow would need to be less than 100 lbs  
so a dead one can be carried  
and so that goat pens can be used  
to make switching from goats to cattle easier.  
Right now miniature cows are 150-250 lbs.

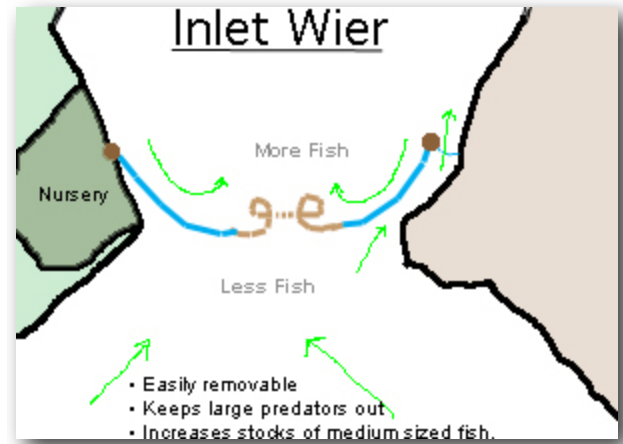


**Full Grown Miniature Cow**

## Fish Ranching

- By constructing the right kind of barrier,

the largest fish cannot enter and the smallest fish can escape  
leaving the little ones to grow up  
and the largest ones to breed  
while harvesting only the medium sized specimens.



## Parks

### Membership Tags

- Become a MEMBER of a Park (State or National) and pass the knowledge tests to get a Blue, Green or Black tag.
  - **Black** Tag allows you in for FREE.
  - **Blue** Tag pays a DISCOUNT entry fee.
  - **Green** Tag restricts you to Green Trails and entry fee is FULL PRICE.

### Trail Types

- Black Diamond trails are quiet trails that are easy to damage.
  - **Gold** trails are off limits except to invited experts.
  - **Black** Trails are for Black Tag holders only. It requires that you walk slowly and whisper.
  - **Blue** Trails require a Blue Tag and require a basic knowledge.
  - **Green** Trails are normal "Family" trails.

### Wild Places

- Some places are by their very nature quickly erase all evidence of human visitation ... while other places need to be visited with a light footprint in mind ....
- Special, unique spots need to be set aside.
- Some wild spaces need to be closed off to humans so they are human-smell free and reserved ONLY for wildlife.

### Low Impact Places

- Land locations that erase footprints ( sand, snow, water ) ....
  - Riverside
  - Alpine trails
  - Grasslands
  - Cliffs,
  - Beaches,
  - Desert Dunes
- These places do well by allowing unfettered unstructured access



so that people places to go that feel truly wild and unencumbered

## Medium Impact Places

### Lake

- Should cabins be easily seen from the water  
or should the on-the-water experience feel more wild ?
- Should a dock be built to as to create a protected area for small fish ?

### Creek

- Vary the flow and micro-eco aspects ...
- Deep pools
  - for fish to rest
  - for kids to swim
- White Water
  - keep water oxygenated
- Babbling areas
  - keep water oxygenated
- Large rocks on pebbles so animals can shelter under
  - for small fish and crayfish etc.
- Shady spots
  - for cool water

## High Impact Areas

- The signs of human activity can last for a long time  
so they should be accessible either in a structured way or not at all.
  - Creek edges
    - Cattle poop and pee in the creek when they drink  
fouling the water.
    - If you plant thorn bushes along the creek in cattle fields  
you provide shelter for small birds while keeping cattle out of the creek.
    - You then use a small windmill to pump fresh water to a drinking trough for the cattle  
and let that over-flow run back into the creek  
so the cattle drink from moving water.
  - Mossy areas
  - Beach Dunes
    - fencing these off ....
      - keeps predators out of bird nesting spots.
      - build the sand up to preserve the dunes

## Animal Sanctuary Areas

- Animals need place without the sight or smell of humans.  
We need to respect these needs as we share the planet.
  - Nesting Cliffs
    - Destroy access pathways  
so predators cannot access
  - Nesting Dunes
    - fencing these off ....
      - keeps predators out of bird nesting spots.
      - build the sand up to preserve the dunes
  - Bat Caves
    - Put grills over these caves  
and surround with thorn bushes  
so bats can fly in-out but other access is denied.
  - Breeding Beaches
    - Fence Off with Boulders and fencing
  - Large Hollow Nesting Trees
    - Tag and grow thorn bushes underneath.

## Edges

- Animals and plants are healthier, more varied and more abundant if they have edges ....
  - Woods to Meadow
  - Woods to Field
  - Field to Stream
  - Different facing sun sides and topographical spots on lake's edge
  - Cliff's edge
- Keep pathways and human spots away from edges  
and use edges only for viewing at .... creating nearby viewing spots..

## Middles

- The total immersion of the "in the middle" experience.
  - Woods
    - Many small animals like the feeling of lots of woods around them
  - Deep Forest
    - Elk and owls need deep forest for Winter shelter
  - Field
    - Upland birds like to be in the middle of tall grass

- River
  - Many river animals like otters and river ducks like sections where the banks are thick with vegetation so predators cannot access the river there.
- Waterfall
- Cliff

## Wildlife

### We are Gardeners

- We are the gardener species.  
we are the sculptor of views  
and the painter of texture,  
the molding of form  
and the combiner of color.
- To seem as if ignored by the hand of man  
and yet nurtured  
toward a greater expression of each element.

### Planting

- Nature can be subtle as to  
which plants like to live together  
and which together provides shelter or food  
and should remain  
while we want more of THIS plant  
and not any of THAT plant  
while only a few of that plant  
don't want too much of that other plant  
and we want to encourage other plantings.
- It is the "Edge Effect" that creates the greatest health and diversity  
so plants should be encouraged in groves or groupings to create edges.

### Logging

**see also :** "Oligopolies" in the Economics booklet

### Encouraged

- Logging of hill tops ( creates views for hikers )
- Meadow sized clear cuts.
- Trees under a certain diameter should be thinned out  
except for thickets for small animal shelter and protection.

### **Discouraged**

- Logging near water features
- Logging of steep slopes
- Clear cut that are too large
- Trees over a certain size that have earned the right to be the "Mother Trees" for the future re-seeding.
- Logging of Rare Species
- Logging of trees with nesting holes.
- Large dead Woodpecker trees because they are used by birds for attracting harvesting pest insects away from the healthy trees.

### **Animals**

- If you stock a piece of land with fast hard to catch prey they will attract PREDATORS that are lured by these easy to see and hard to catch prey and stay to settle for the mice and other easier to catch varmints.

..... so fast prey gets rid of mice and other varmints.

### **Fish**

- To keep streams stocked and healthy without suffering the lack of genetic diversity that fish hatcheries create.

### **Gold**

- Spawning areas ... NO FISHING

### **Blue**

- Catch and release areas for all native fish
- Catch and keep for any non-native fish.

### **Green**

- Catch and Keep any fish under a certain size.
- Large fish are released as breeding stock.

### **Hunting**

- No hunting of any kind without having first taken and passed a hunting safety course.
- No hunting until you are a teenager (right of passage).

- No minor may hunt unless accompanied by a qualified adult.

**Without License**

- Varmint hunting anytime ( rabbits )
- Nasty dangerous predator hunting near populated areas anytime

**With License**

- Those good species that need to be regulated and would otherwise have been controlled by wolves and bears. If you don't want dangerous predators, you need to dopt their role.

**Moratorium**

- Every 5th year there should be no hunting at all.

## Structures

### Natural Structures

#### Pile of Rocks

- Too heavy for a man to want to move so it stays put.
- Large pockets and small pockets and corridors.  
Make sure the holes are large enough for weasels to catch rats.
- Collects dew
- Creates distant view look-out mound for small animals.
- Warm place to nest for snakes, mice, and their predators.

#### Pile of Wood

- With Hollow Logs
- Slowly rotting for warmth.
- Mixed with fallen leaves and mosses.
- Full of grubs in loosed or fallen bark.

#### Large Shade-Trees

- For wildlife rain protection.

#### Tight-Dense Tree Grove

- With thick bushes surrounding the grove  
to create a warm dead air place for warm protection of wildlife in mid-Winter.
- Without thick bush ring surround for cool breeze heat protection in mid-Summer.

#### Food-Bush Clusters

- Feeding stations for wildlife

#### Fruit Tree Groves

- At the edges of Meadows.

#### Thorn-Thickets

- For small animals to rest and sleep in safety.

#### Small-Tree Thickets

- For small birds to rest and sleep in safety.

#### Tree Holes

- Create lots of holes of varying sizes for shelters.

#### Ground Holes

- Create the beginnings of burrows with openings in rocks

## Hollow Logs

- 

## Water Collection/Storage

- A pond or lake reduces the speed at which water leaves the area in question and provides an area of wildlife congregation.  
The health of a pond or lake depends on the variety of areas the lake or pond creates.
- Having both shallow and deep areas creates a solar pumping cycling of water from lower to surface areas and back on a daily bases.
- Having a small island in the middle creates a sanctuary from predators.
- Having a sand bank creates a place for turtles and small lizards to lay eggs.  
That bank should be facing south or south east.
- Secluded edge ( for those animals that prefer )
- Out in the Open edge ( for those animals that prefer )
- When it rains the water collects in a copper filled/anti-bacterial catchment that drip-drains off slowly and is wind or solar stirred  
so as to assure cleaner ( mosquito and pathogen free ) oxygenated moving water and delays the drying up after a rain to reduce times want.  
to somewhat damp/soften the wet/dry, hot/cold experiences  
to increase the numbers and health of wildlife ( plant and animal ) varieties.  
some of whom can also be spiked with medicinals for wildlife inoculations.
- So for a small pond  
and a wind or solar powered fountain of waterfall,  
to keep mosquitos and pathogens out of the water  
and to add oxygen / ozone.  
Add pennies or a long retrievable coil of copper  
along the bottom.

## Human Structures

- Re-usable modular pre-stressed Concrete structures.
- Simple, architecturally neutral, zero-maintenance designs.  
Animals respond better to simple unadorned structures
- Able to be easily helicopter lifted in/out  
so as to leave no lasting footprint.
  - Bridges ( over depressions, creeks, sensitive spots ....)
  - Piers ( over lakes, Rivers, Cliffs ....)

- Shelters ( rain, wind, cold, predators )
- Slabs ( camping, resting, sitting, viewing ....)
- Elevated Trails ( over wetlands, rough spots ....)
- Elevated Viewing Platforms  
( distant viewing, looking down into water ....)
- etc.
- Modular Concrete fishing spot/pier out over the River/Pond.
- Canter-levered beam  
supporting a walkway to the viewing and small gathering spot  
on the end of the beam  
over a ....
  - River
  - Cliff
  - Pond
- With a resting/viewing space on the end

#### **Platform**

- Deck / Viewing Platform
- Rock Slab
- Mowed Meadow

#### **Shade**

- Cool breezy spot for the middle of a hot day
- Big Tree

#### **Rain Shelter**

- Porch
- Dry Roof Shelter (no walls)
- Rock slab on top of boulders

#### **Wind Shelter**

- Rock looking slabs upright
- Large trees
- Thick bushes

#### **Cubby**

- For shade, rain and wind protection when sitting and resting.

#### **Washroom Stations**

- Door that closes automatically

#### **Water Stations**

- Use Copper and movement to keep water clean.



### **Closed Shelters**

- Near but not at the edge of those meadows and fields and above bear height in those forests, to create ....
  - Rain-free spots
  - Warmer than average night-time under spaces
  - Cooler than average during the hot parts of the day.

### **Traveling**

- Making sure and go THRU woods and forest or OVER wet patches, swamps and bogs or difficult sections that you could not otherwise reach.

### **Trails**

- Should be trails thru middles and at the edges leaving all the non-trail spaces clear of footprints so the animals can smell that all non-trail spaces are safe because they are free of human smells and marks so they assume that it is a safe, human-free zone and use those spaces in a more abundant and relaxed and natural way, seeing the human as merely a harmless spectator wanderer moving thru.

### **Paths**

- Looks like no trees needed to be cut
- Bicycle and WheelChair friendly when reasonable.

### **Roads**

- Large roads , because of the earth-moving and tree cutting creates the effect in hilly country that it is going from Woods to Meadow and the edge of in the middle. like a long snaking string of Meadow patches and fields and woods and forests.
- This patch pattern creates a lot of "Edge Effect" the result of which is a greater concentration and diversity of animal and plant life. which would be great to see on a road trip as long as they have plenty of places to duck under the road. This then also gives them dry shelter in rain and it can even be made to gather heat from the road surface to slowly release heat at night in the under-pass.

## **Rail**

- 500 miles per gallon per ton.
- most are 3% max incline.
- Combine with BIKE PATH

## **River**

- TRAIL next to river
- BRIDGE slabs ...modular concrete, pre-colored, pre-stressed
- DOCKS to fish from and tie up.

## **Ocean**

- You are a covered Wagon on the Desert.
- A Space Capsule

## **Lanes**

- Shipping Lanes and Human Free areas.
- We put automatic buoys and pings for containers that fall overboard so jetsam and equipment does not accumulate.

## **Preserves**

- The Sargasso Sea should be a preserve.
- All the centers of the rotating currents accumulates floxum ....  
not so good for a Shipping Lane  
but great or concentrations of life and nursery.

## **Breeding Spots**

- Should be off-limits for fishing.

## **Nursery Spots**

- Should be off limits for fishing.

## **Growing Spots**

- Fish Farming causes disease.  
Fish Ranching does not.
- Creating ....
  - Fish concentrations
  - Predator free growing zones.
  - Concentrated feeding.
  - Nursery for small fish
  - Harvesting Spots

for medium sized fish

#### Inlet Fish Ranching

- Semi Blocked-off inlets  
so it is easier for a fish to go in  
than a fish to go out.
- Put small mesh net area inside  
for small fish protection from medium fish.

#### Open Ocean Floating Net Pens

- Small mesh net surrounded by larger mesh net.
- Smaller inner section is a nursery.
- Larger outer mesh net is harvesting area.
- The system will attract life like a floating reef  
and eventually becomes self sustaining.

## The Experience

- People seek a combination of  
**journeys/efforts/goals (PATHS)**  
**and**  
**destinations/rewards (PLACES)**  
in their experiences.

## Signs

- Create a learning experience.
- Point out Owl nests
- Label some plants and trees.
- Restrict some spots where animals need extra privacy.
- Display lists and photos of plants and animals to see.
- Mark trails
- Point out distances
- Direct toward Human Structures ( washrooms etc.)

## Human Places

### Products

- We need to make sure that our products do not form a danger to wild places.

### Bio-Degradable

- Products that do not degrade but are 100% recyclable are far preferable  
over half-rotting bio-degradable human products in wild places.

### **Impact Rated**

- What if we gave every product a label based on its environmental impact (with greater details on its WebSite) as to ....
  - Toxicity
  - Recyclability
  - Environmental disruption of raw materials

### **Worldwide Recycling**

- If there was a bin for used good stuff such as drawer handles when they have been replaced or tools no longer needed. They can be unsorted and sent to others in need.

### **Homes**

- Home construction should be 100% recyclable.
- The goal for homes should be ....
- Clean its own water going in and going out
- Grow much of its own food
- Provide food, water and shelter for some types of surrounding wildlife.
- Green sticker on mailbox means no unsolicited mail. ( would save lots of trees )

### **Neighborhoods**

- Provide wild green space corridors for wildlife.
- Make some spaces off-limits to human traffic.

### **Cities**

- Provide large parkland spaces with wild foods and water.
- Make some spaces off-limits to human traffic.

### **Regions**

- Create large Wildlife Preserves.
- Preserve all places that are unique.
- Make some spaces off-limits to human traffic.

### **Keepers**

#### **Eco Keepers**

- River Keeper
- Forest Keeper
- Beach Keeper
- etc.

### **Duties**

- Take pictures
- Catalog species
- Record changes
- Check quality of soil, water and air
- Make complete reports available in realtime to both "The People" directly and to the legislature

### **Government**

- The ecosystem should be dealt with thru several non-governmental divisions and alliances with common topographical and ecological concerns.
  - Area / District of Counties ( **see** : page )
  - Sections of the State ( **see** : page )
  - Regions of the Country ( **see** : page )
  - Alliances Between Nations ( **see** : page )

# Project Example



altered



- A • Originally there was a dirt path close to the concrete work of the spillway and it was steep and slippery in the wet and caused erosion. The neighborhood cut a new dirt path to the road which is far better.
- B • When there was the big rain that flooded the soccer field, a tracked piece of equipment came in and “improved” the creek just downstream from the spillway. As a result it cracked and ruined the concrete sidewalk in several places.
- C • Knowing that the sidewalk needs to be redone there we are hoping that it will extend to the new pathway we made.
- D • If the original end of that path is taken out, the steep dirt path will be eliminated. Blocking it off with a large native bush would be an excellent feature.
- E • Then the path would be better and a bench could be placed by the larger pond (for better flood control)





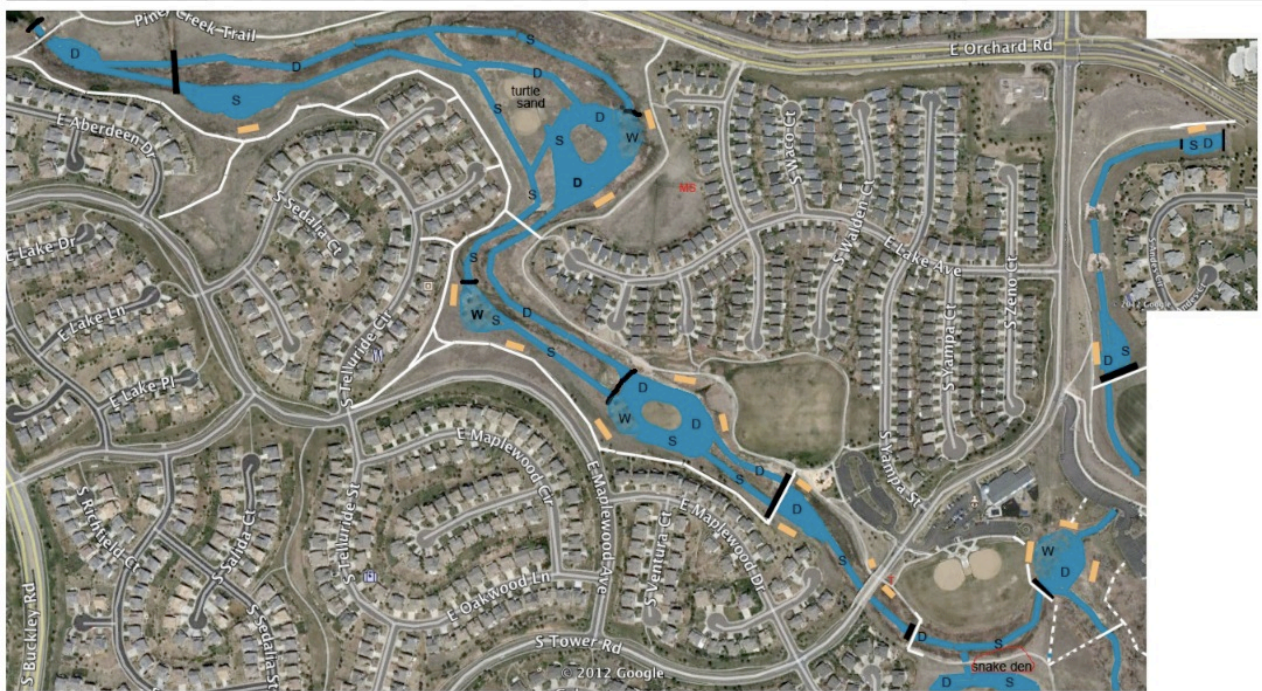
- Quail population has plummeted in the last 4 years to near zero.  
Every late Fall the fields are mowed to keep down fire hazard but I suggest the marked areas be left tall and native seed/ grain bearing plants be introduced to allow for winter survival of quail .... since they do not migrate.
- The Coopers Hawks pester the Great Hoened Owls such that last year they did not nest there.  
Coopers Hawks prefer to nest high (a sign near their nest helps gain attention and respect) while Great Horned Owls are happy about 20 feet up.  
By placing a 20 foot high large owl box, the conflict is avoided.
- An Owl Box also allows for another sign post for human/nature interest involvement.
- Swensons Hawks also come into that area every year but do not nest.
- A large Red Tailed Hawk nest is also in the area but I believe it to be on private land.
- The Cottonwood Trees in this area are almost all dead due to root drowning because the creek was not dredged often enough.  
the additional run-off caused by the housing needs to be taken into account and that creek dredged about 2 feet.  
There is not room there for a secondary channel so as water levels get high the Cottonwood area floods and kills the trees.
- These dead cottonwoods need to be removed but a couple of "pecker trees" need to be left so bugs that predate on weak trees will tend toward the Pecker Trees where they can be harvested by Woodpeckers and thus protect the remaining Cottonwoods. .  
A Pecker Tree is created by taking a dead Cottonwood and drilling lots of small holes all over it.  
A nice large Owl Hole might also be created there keeping the area more natural than nesting boxes.
- The area is a favorite place for kids to hang out and so the trail needs to be improved but not paved.
- The pre-teens tend to make a tree house there and when the tree house is removed a new one quickly appears.  
These tree houses are damaging the few remaining Cottonwoods.  
I suggest the Scouts that adopt that part of the creek erect a proper treehouse beside a cottonwood so as to feel like a proper treehouse while not harming the tree and make the initial step of its ladder high up enough to keep smaller children off  
A sign reminding people of the age of the tree might also help them better respect it (kids have painted on parts)  
This gives those younger citizens their space while respecting the overall area.
- Local teenagers hang out there as well and make a mess of the place.  
They need a concrete slab with some benches under a cottonwood so they feel they have "their space" and thus better respect it.
- You can't keep the kids out and they need to enjoy the wild spaces in their own way so they can experience and learn to better respect.  
Better to create structures for them than to try to exclude them or let them ruin the spot.

- There is a Hybrid Coyote that can be spotted very early in the mornings around the area that is now a football field. It has black inside its ears and a curled up tail. It needs to be eliminated so as not to do genetic damage the Coyote population. Texas did not deal with the dog/Coyote hybrid problem soon enough and is now over-run with what it calls “Brush Wolves”.
- Just as with the lower section of Piney Creek, I suggest a survey reference post in several spots so that pictures in four directions are taken 4 times a year by a volunteer “River Keeper” (usually an old retired guy) so that changes can be easily monitored.



- **Creek thru field needs an 8 ft winter tall grass border because some field species stay in the winter and need a warmer sheltered spot for deer to bed down on thick grass and upland birds (quail) to hide and fox food supply during the winter.**
- **Trail thru “Owl Woods” is being used by off-road bikes so some of the large limbs cut from the dead Cottonwood need to be place across the trail to deter the bikes. A sitting log and a large log used as a damn at the pond keeps things as natural as possible .**
- **The cars drive very fast so there is often a police car in the parking lot. people cross over to the park and traffic needs to slow. Drivers do not see any crosswalks until they get near the bridge. By adding a couple of well marked crosswalks it should help caution the drivers. In addition, the bike paths need better street crossing for strollers, elderly scooters and bikes so at the enterance to the parking lot a ramp need to connect the sidewalk across the street.**
- **The small bridge just downstream from the snake den could be a shallow curve pre-stressed one-piece structure so that if a large flood comes thru and washes it out, it will be easy to just crane it back in place Same with a small bridge across creek in “Owl Woods”.**
- **Same with the concrete slab for the teenage gathering spot in the “Owl Woods”. Just make it one pre-stressed slab that can be placed, removed or moved easily.**
- **Make the kid’s treehouse bolt together treated and sealed wood so it can be repaired, moved around or removed and reassembled.**
- **Make the benches “in memory of” so they slowly multiply over the years until there are enough.**

.... in 3-4 stages



- Every pond must have a deep area and a shallow area to promote daily solar induced water circulation.
- Place reference posts .... take pictures in four directions 4 times a year to catalog changes. .... volunteer "river keeper".
- Put up informative signs to get people interested and involved .... such as at the swallow bridge and snake den sites. ... gets people involved.
- Place sitting benches at interesting spots. (orange)
- Islands create comfort places for wading birds (egrets, herons etc) and increase survival of puddle duck babies.
- Islands **DECREASE THE COSTLY NEED** for sediment removal. (reinforce with large rocks)

W .... Weedy (nursery)  
D Deep (main flow)  
S .... Shallow (for overflow)

- Islands give puddle ducks a place of peace.
- Dep channels is main channel
- Shallow channels are for overflow
- Sandy area is for turtle nesting

- Dams get scooped every 5 years for silt.  
Easy maintenance.

**Stream gathers its own silt for inexpensive and easy removal**

- Shallow streams take care of overflow automatically
- Make sure there are also large logs and rocks in the mix
- Row of 3-4 ft rocks at the downstream base of a dam to create white water
- Plant thorny berry bushes in dangerous areas (primrose hedge near swings)
- It will prevent accidents
- Provide shelter for both berry and insect eating small birds
- Pile high extra rocks over snake den area (Bull snakes and Garder Snakes)
- Make gravel bed under bridge....for stability and aquatic egg laying
- Get local Boy Scouts involved in planting and stocking

Box Turtle  
Western Painted Turtle  
Craw Fish  
Fingerling fish  
Frogs (Western Leopard Fog)

MS Spotted a Colorado Milk Snake (could use a deep half buried rock pile)

T Spotted large toad on east bank of bridge (sandy bank)

**The way they have it now the "Pond" will become a dry sandbar part of the year and much of the water will drain under it and kill the vegetation downstream.**

**The method of pools and main channels and secondary channels assures that there is always water so the aquatic life balance is maintained and overflows do not damage the main channels.**

**Maintenance is a simple matter of dredging the pools which can be done without disrupting the overall ecosystem and can be done with smaller cheaper equipment; for example with a pole on the other side of the creek and a bucket and cable delivering the sediments to one side for removal or dumping on the the center islands.**

**Use large rocks to stabilize the islands at their front and back. Large logs at their side partly in the water created fish shelter and turtle logs.**

**Making it attractive to Herons and Egret helps automatically stock the creek because those birds often hold frogs and fish in their craw and then drop them out elsewhere.**