

Acknowledgements

This exhibition has certain unusual properties that relate to the generation of the images and subject matter within it. The majority of the work here is the outcome of a co-creative process, wherein we the artists posed questions and with a small group of very talented people generated the answers.

Richard Jennings: Project Manager / Exhibition Photographer / Seeps & Springs,
Jan Willem Jansens: Watershed Grasslands,
Joel Glanzberg: The Guild and Genetic Diffusion, Ben Haggard: The Urban Ecosystem,
Rina Swentzell: River Narrative, Neil Williams: River Bottom Engineer, Edward Archuleta: On Growth and Limitation

Project Participants

Agua Fria Village Association
Aguilar, Destree
Archuleta, Edward
Baker, Colleen
Baker, Ralph
Barclay, Leslie
Belin, Letty
Bohn, Bryan
Bokum, Consuelo
Bowden, Suby
Brascoupe, Clayton
Bridges, Jeff
Chavez, Miguel
Clarke, Gar
Coss, David
Darlington, Jake
Joe, Day
De Aguero, Simón
Debuys, Bill
Diniz, Elvidio
Dominguez, Juan
Drypolcher, Brian
Elkin, Robin
Emerling, Susan
Evans, Jaune

Fenner, Andrew
Fischer, Zane
Friedman, Rebecca
Geer, Kyle
Girandola, Joe
Glanzberg, Joel
Grant, Paige
Groeneveld, David
Haggard, Ben
Hannan, Jim
Harper, Jeffrey M.
Harris, Steve
Harwood, Kyle
Hitt, Sam
House, Donna
Houtchin, Nathan
Jansens, Jan Willem
Jennings, Richard
Jennings, Lydia
Johnston, Janine
Karshis, Phil
Kempter, Kirt
Kidd, Jeremiah
Kidd, Katy
Kohout, Johanna
Kong, Franky
Kowalski, Judy
Lacy, Ann
Lannan, Patrick
Lichen, Nicole
Lichtenstein, Tamara
Lopez, Andres
Lopez, Palemon
Madrid-Solis, Erasmo
MacArthur, Ana
Mahaffey, Molly
Martin, Susan
Martinez, Manuel
Mazuera Davis, Christie
McQueen, Matt
Nathan, Fred
Nelson, Michael
Nipper, John
O'Keefe, Brian
Orr, Chrissie
Ortega, Chris

Parski, Paul
Pilling, Amy
Rael-Galvez, Estevan
Reifman, Marcia
Romero, Tabitha
Roybal-Siqueiros, Cristella
Sandin, Dennis
Sardella, Mark
Scanlan, Mike
Schaafsma, Polly
Schlesinger, Jennifer
Schumann, Martha
Shirin, Marion
Smith, Ken
Spears, Beverly
Stanford, Verne
Stauber, Zack
Stockdale, Karyn
Swentzell, Rina
Taylor, Linda
Tharnstrom, Steve
Torpey, Eileen
Tsosie, Olivia
Tuch, Andy
Usner, Don
Webber, Andy
Wells, Chris
White, Courtney
Williams, Neil
Wilder, Richard
Wilkinson, Marie
Wilson, Sheila
Zaharopolous, Eleni
Zeedyk, Bill

With Support From

A Sound Look
Bohannon Huston Inc.
Brindle Foundation
Burnett Foundation
City of Santa Fe Arts Commission -
Community Arts Development Program
Lannan Foundation
McCune Charitable Foundation
Santa Fe Rotary Foundation

Graphic Design: ARCK LLC www.arkc.com

Santa Fe Watershed: Lessons from the Genius of Place Helen Mayer Harrison and Newton Harrison

Santa Fe Watershed

Lessons from the Genius of Place

Helen Mayer Harrison
Newton Harrison
Santa Fe Art Institute

The Arroyo and the Guild A Genetic Diffusion System for the Santa fe Basin

We were looking at the arroyos. Many looked scoured and bare of normal vegetation. I asked him, "How would a person invent a genetic diffusion system to encourage biodiversity in the arroyos?" He was knowledgeable about such things. He said that there was a long history of putting check dams, large and small, in the arroyos to catch earth, to catch water, to encourage growth and the model for this was the ancient farming system that most thought went back to the Anasazi, where they planted corn and other crops behind these small dams. He said, "Around here we call these check dam plant ensembles with differing root lengths guilds." So I said, "Put aside individual arroyos and think genetic diffusion system for the whole." And he said, " Look at where the arroyos begin."

"Why?"

"Gravity."

Beginning
By mapping all of the arroyos available
On the USGS 1:100,000 map
Finding that there were 87 logical sites
Depending on who is counting,
Finding monies to create 87 check dams
Near the tops of the arroyos
Which feed the Santa Fe River

By the next spring rains
Or those of the following year
Guilds
Ensembles of drought tolerant plant life
Will be planted in the area
Immediately behind the check dams
Where the soil gathers

Plants with different root lengths will grow
Creating friable soil on their own microclimate

After the blooming
Seeds will drop and move down hill
Carried by wind and water and wildlife
And genetic material is diffused thereby

The Piñon and The Patch: A Topsoil Grassland Regenerating Opportunity

We saw
That under the remains of dead piñon
Infested with bark beetles
At a level that is astounding
Lie a series of islands of soil and duff
In between the islands
Lie ephemeral drainage swales
With grasses
That are hanging on barely
As the ground around and under them
Is washed away

He was, among other things, a water harvester. We were discussing storm pulse systems, the sponge phenomenon and drainage patterns as we were looking at a stand of dying piñon.

Asked, he explained that early on massive overgrazing of the then rich grasslands had led to massive topsoil loss during heavy rains. He said that the piñon and the juniper had settled this bleak landscape and the piñon, now weakened by the drought and under assault by the bark beetle, were dying in millions. Looking at the dark earth that has been formed by the piñons, thinking about spreading it patch to patch, I said, "What an astonishing cycle." And I began to imagine new grassland patches coming into being.

The piñon yields energy twice in the process of dying. Once from the tree, wood which can be burned or transformed and the other from the enlivened earth. We tried to calculate how much a new reservoir of topsoil might be worth, then tried to imagine all those harvested piñon yielding energy.

We made a proposal for the northern quadrant of the city. If 100 acres of new grassland or interconnected grassland patches were generated as a result of the death of the piñon, the area would over time, turn into a sponge and with a one inch storm, the piñon, the area would over time, turn into a sponge and with a one inch storm, absorb approximately 12 acre feet of water as well as make healthy grasslands. Our thinking came to naught. "But," you said, "This idea might need repetition, again and again, until it seeps into the discourse that forms the cultural landscape."

The piñon dying in great numbers
The new earth below
The raking together new earth
Grasslands beginning to form

A River Narrative

Mountains
Where clouds form
From which lightning comes
To energize the water serpent
Who lives within the earth bowl
Wherein
Flowing waters
Rivers and streams
Nurture life

Studying the Tewa symbols
Made in earlier times by people who lived here
Not understanding these symbols
But feeling their vitality
We imagined an implicit narrative in them
And that narrative wanted to happen
So we asked our engineer
If for instance
A 40 foot zig-zag form
Or bowl forms
Or mountain forms
Or serpent forms
Could also be used in the riverbed
As forms that would catch earth
And forms that could create sinuosity in the river
Once the riverbed has been raised.

He said
Yes
Why not
But it will be more expensive
Than a normal weir
You said
Art always costs a little more
I said
Sometimes even much more
The real question was
Did it want to happen

So
With a small group of students from the Indian School
And people who were wise and knowing
In the ways of Native American symbol structures
And the narrative potential embedded in them

This work was born
All who saw this image liked the idea
That an ancient river story
Might contribute to the restoration and wellbeing
Of the river itself

An Occasional Cascade for the Santa Fe River: Returning Earth to the River Bottom

Almost 40 years ago
Standing at the edge of the Santa Fe River
We saw a running river with riparian habitat
And Cottonwood bosques
Where people were fishing
What has happened here
This story
Of what happened here
Was told to us by many
Although fully understood by few
In answer to the question
What are the best things that could happen here
Our project engineer said
The concept is simple
Raise the riverbed
Which in turn would
Raise the water table
Setting the stage for
Restoring the sinuosity of the river
Restoring the riverine habitat
And some of the acequias
Continuing

He said
Invent a weir system
To catch the flow of earth and debris
Add new weirs each year as needed
Until the bed of the river is normalized
I asked
How much would an eight mile stretch
From Frenchy's Field to the sewage plant cost
The answer
Was about \$4,000,000 to \$5,000,000
For 400 weirs with present technology
Less with simpler technology
Then you said or I asked

How long will this take
About two years
Where the cuts are shallow
And perhaps 10 years or more
Where the erosion is severe
Around the gravel extraction site
Then you said or I said
About \$400,000 a year would be needed
Let us begin to find the funds to do this work
and let us call this work
An Occasional Cascade for the Santa Fe River

He was the head of a granting agency and wanted to know where the financial pay-back to the community would be if he put funding behind the research and exhibition. We said, "Imagine a restoration of 8 running miles of river from above Frenchy's Field to the sewage plant. Imagine 14 running miles of restored river edge, then calculate the increased value financially of the adjacent lands and calculate the increased value ecologically and then calculate the value socially and culturally." He nodded.

On River Walks

We were at a meeting composed of leaders from the various groups involved in generating a path system along and about the whole river, many had been involved for some years. We talked about our work and the envisioning process in which we and others were involved. Mostly we talked about things like raising the riverbed, the genetic diffusion system or the topsoil that could be found under the piñon. However, a concept came to us as result of paying attention to the river. It was a simple question. Why not make a river walk that was segmented in such a way that each segment had a narrative distinct to itself and the ensemble of segments would behave like a picaresque novel? We also said that having done urban walks we had discovered that each 20 minute segment of a walk needed an event along the way to generate focal points. Finally, you said or I said, "If we had a designer for the whole, so that the graphics were powerful and the narrative structures were coherent, a remarkable statement could be made. It would be as if a river, and the river edges, were talking about themselves through the stories of the people who had lived there."

Although many found the concept interesting, somebody said, "Where would the money come from?" I said, "It's only an idea invented in a moment of epiphany thinking about the river." You said that there may be too much conflict to ever come to such agreements. But the idea, assuming it was valued by many, may begin to develop a life of its own."

A Piece of water

Finding a compelling undulation
There on the arroyo bottom
Removing the image
Leaving the bottom intact
Bringing forth the undulation

Andrew Fenner

Between a Rock and a Very, Very Hard Place: It's Useful to Know

We've run out of river and we're running out of water. Springs are going dry and well levels falling. By 1970 the spring in Agua Fria dried up and in the past 10 years the well system which is the main source of the city's water has dropped by 560 feet.

The aquifer in the Northern part of the county is deep but it tends to recharge in geologic, not human time.

The Santa Fe River has perennial flow only above the reservoir only in sub-humid zone and in the reach below the "waste water" treatment plant in the arid zone. Now population of the county has grown from 38,000 people in 1950 to over 115,000 today. Growth of the county has doubled growth of the city. Although there are permits for 19,905 Acre Feet Per Year in water permits, plus 5,605 AFY in leases, current annual production is only 12,000 AFY because each source falls short on production.

All water in New Mexico may belong to the public, but rights to use the water or "paper water" are rights held by private owners. However, "paper water" in the Rio Grande River exceeds our wet water by a factor of 2 or 4. Native American tribes hold the oldest water rights, as indeed they should. Presently 14 of the 18 tribes that are on the Rio Grande are in state or federal courts to adjudicate their rights. If the tribes are given their due, the issue will become how much do we shrink not how much do we grow.

We were sitting in a group
Of knowledgeable people
Discussing these issues
He said
The best thing looks to be slowing growth
Or even ending it altogether
While increasing the quality of life.

I said
Probably the worst thing
Is to keep growing until systems collapse
Somebody else said
If you stop growing you put a lot of people out of work
And still somebody else said
The conflicts here are profound
For instance
If the true cost of water
Moved up to 50 cents a gallon
And if a household here,
Very frugally,
Used only 50 gallons a day
We would be looking at a \$25 a day water cost,
Or \$750 a month.
Then I couldn't afford to live here anymore
So I said
Has anybody stepped forward
A person of power
Or people with vision
With an over arching idea
Or vision on how to both slow growth
While increasing quality of life
No one stepped forward
Then no one would even talk about it seriously
Then you said
It was about taboo time.
And I said
Are they really considering
A hundred million dollar pipeline
To draw on other waters that may not even be available

Finally somebody else said
The developers are very powerful

Where a Little History Goes a Long Way

We were in a small group discussing the difference between the river now and the river forty years ago, and the sense of crowding, and how one might get a feel for some of the history of this place that wasn't out of a textbook. He said his family had come here in the seventeenth century. He was the storyteller of the family. His family had letters and papers of various kinds, and property deeds. A sense of the life of a Hispanic family flowing through time and space over perhaps 300 years of Santa Fe life reside in these papers. So you said, "Would you be willing to help us select from these papers and make a small book that people could look through? And would you be willing to be a storyteller for this exhibition in a video that we are making?" He thought for a minute. He walked up and down on the large floor map. He said, "Yes."

An Urban Ecosystem for Santa Fe: Compensating for its Present 27 Square Mile Footprint

In midsummer
Walking on mostly treeless streets in downtown Santa Fe
With the sun relentlessly creating a field of heat
In its transaction with the blacktop and hardscaping
Making a moment of discomfort with no bird sounds

We began to discuss
How nice an arboreal overstory would be
If properly conceived
It would reduce the temperatures at street level
Bird life would increase
As would the quality of everyday life.
And if the trees were deciduous
The sun would be still be able to warm things a bit in the winter

Therefore
With a small group of people

We began to explore
What a new urban ecosystem might look like
What an urban plant vocabulary might be composed of
That would improve the quality of life
For people and other urban species

Now it was clear that if trees were the overstory
We might think of buildings and people
As the middlestory
If so
How might we imagine the ground story
Although it appeared to be
An intractable admixture
Of pavement
Occasional parks
Backyards and frontyards
Someone said
Why as a sponge, of course

I said
If the city has a twenty seven square mile footprint
Much of it hardscape
And adding sixteen hundred acres of development
Is now being debated
Then a whole new attitude
And process and funding and design
Needs to be put in place
If the soon to be thirty square miles of city
Has to behave like what was once thirty square miles of friable Earth

So unable to think about a whole city
With so few resources
And so little time

We chose a site we could actually think about
Bordered on the North by Frenchy's Field
And the river
On the South by Cerrillos Road
On the West by Maez Road
And on the East by the end of Casa Allegre
Thereafter
We mapped this neighborhood ensemble
In four perspectives
Hardscape softscape overstory
And the activity of water

On Seeps and Springs The Movement of Water and sewage Through a Community

Thinking about Seeps and Springs
And recapturing sewage
And recapturing storm waters
After that
All of the waters that fall here
And the sewage that is produced here
And some fair percentage of the storm waters
Belong to the people here

There is a system adaptable to small communities that takes raw sewage and transforms it into water of better than that from secondary treatment. Thereafter, the earth through which it flows finishes the treatment. Seeping into the riverbed after treatment, the water behaves like the perennial springs that once existed here. The same can be true for the treatment of intermittent storm water run-off, either on the surface or underground. Therefore, we propose small systems that do this for this place.