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Native American Permaculture at Tesuque Pueblo: 1997 Program Description

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In 1996, the Environmental Department of Tesuque Pueblo, in association with the Traditional Native American Farmers' Association (TNAFA), initiated an educational program for Pueblos and indigenous peoples that focuses on the restoration of ecosystems, the revival of traditional sustainable agriculture, and the ecological design of community infrastructure.

In July 1996, Tesuque Pueblo hosted the first Permaculture Design Certificate Course specifically for Pueblo and indigenous people. Tesuque Governor Rick Vigil presided over the design course graduation ceremony, and 35 Native Americans from six pueblos and 12 tribes received their certificates from the International Permaculture Institute. Course participants included elders, grandchildren, Pueblo officials, students, and a wide range of skilled individuals, with a near equal balance among men and women.

The intensive two-week training included theory and practice of ecological land use planning, watershed restoration, home and commercial organic gardening, alternative building design, natural waste treatment systems, soil building, forest gardening, seed collecting and preservation, animal forage systems, native plant lore, and regenerative economics.

After completing two years of practical application of the permaculture design system, graduates will receive their diplomas from the International Permaculture Institute, Australia, which entitles them to become certified permaculture designers and instructors.

As a system which honors traditional cultural practices of earth stewardship, permaculture was enthusiastically received by the course participants. A sufficient level of interest was generated to develop the program further for the 1997 season, April through September.

Definition

Permaculture (permanent agriculture) is the conscious design and maintenance of agriculturally productive ecosystems which have the diversity, stability, and resilience of natural ecosystems. It is the harmonious integration of landscape and people providing their food, energy, shelter and other material and non-material needs in a sustainable way. Permaculture design is a system of assembling conceptual, material and strategic components in a pattern which functions to benefit life in all its forms. The philosophy behind permaculture is one of working with, rather than against, nature... (Bill Mollison, *Permaculture: A Designer's Manual*)

During the past twenty years, permaculture has grown into a global grassroots initiative, a diverse folk movement that is inventing itself with new cultural adaptations. There are permaculture institutes in over 50 countries and permaculture projects in over 100 countries. Permaculture is a worldwide network of people, institutions and communities which are sharing practical strategies for creating an ecologically sustainable future. Permaculture is being used as an effective tool by indigenous communities around the world.

1997 goals

The goals for the second year of the permaculture program at Tesuque Pueblo include the following:

- Conduct 2nd Annual Native American Permaculture Design Course, July 15 to August 1st, 1997;
- Establish a one acre permaculture demonstration farm at Tesuque;
- Build an outdoor teaching classroom near the Tesuque day school;
- Start a nursery for native plants and selected exotic useful plants;
- Conduct a series of six weekend workshops throughout the growing season;
- Conduct a six-week permaculture training camp at Tesuque as part of a Field Scholars program;
- Develop comprehensive 5 year development plan to implement ecological design and restoration measures at New Mexico's Pueblos;
- Start on an information resource base, or library, on permaculture and related topics to serve as the basis of a permanent teaching facility at Tesuque.

Land care and ecological restoration

The permaculture program will work with the Pueblo's environmental standards program for watershed preservation and enrichment. Permaculture measures will include the following:

- *Erosion control* through the construction of swales and gabions to slow runoff and stabilize slopes;
- *Keyline contouring* for water harvesting, selected perennial planting and inter-linked pond systems;
- *Riparian repair* and regeneration through regeneration of willows and cottonwoods combined with bank stabilization, earthworks, and storm ponds;
- *Reforestation* of eroded pinon juniper areas to move toward climax Ponderosa ecosystem;
- *Broadscale revegetation* utilizing the above combination and the Fukuoka method of aerial seed balls.

Educational capacity building

A *library* and *database* to house information at Tesuque Pueblo on permaculture-related resources, such as institutional contacts, international network, journals and periodicals, technical references, supply sources, etc is proposed.

The permaculture program will require *audio visual production* capability for developing an on-going series of instructional videos. *Project documentation* will be developed in the form of reports on each workshop and each ground project, including photos, video, syllabus, class evaluations, designs, etc. This document would be made available in self-published form for teaching, fundraising and project development.

Practical ecology workshop series

In addition to the 2nd annual two week Native American Permaculture Design Course, a series of weekend workshops is proposed throughout the course of the 1997 season. These workshops will focus on developing specific skills for implementing permaculture, traditional or ecological designs. The following is the tentative list of topics covered in these short courses:

- Home garden design;
- Erosion control techniques;
- Bees and honey;
- Cold frame nurseries;
- Willow coppicing;
- Live fencing;
- Composting;
- Orchard design and layout;
- Seed collecting, selecting and preserving;
- Food processing and preserving;
- Seed pelletizing.

Culture and ecology

It is well documented that tribal traditions have highly sophisticated knowledge of land, water, plants and animals. Indigenous peoples have a legacy of sustainable

earth stewardship. The Native American Permaculture program at Tesuque will continue its collaboration with the Traditional Native Farmers' Association (TNAFA) in exploring the links between applied ecology and cultural traditions of land care, sustainable agriculture and balanced human settlement. Historical and cultural research will be encouraged which may entail collection of old documents and photos, archaeological field trips, conferences, gatherings and exchanges.

Field scholars program

A field apprenticeship or **Field Scholars Program** will be initiated to take promising youths of Tesuque and other Pueblos to gain intensive hands-on practical experience and training in gardening, water systems, agroforestry and land reclamation.

The Field Scholars Program would provide part-time jobs for Tesuque youth. (The possibility of paid internship from highly selected 'outsiders', perhaps even from other countries, is being explored.) Field Scholars would also be groomed for assistant teaching positions in following years.

Ecological economic enterprise

Agroforestry holds major economic potential for Tesuque Pueblo in the mid- and long- term. For example, one fifty year old walnut brings in about \$30,000. The generations of grandchildren can plant their retirement funds now.

Arts and crafts has a very strong tradition at Tesuque Pueblo, and yet more can and is being done to renew cultural traditions of making arts and crafts out of native species and materials. The willow basket workshop that occurred during the 1996 Permaculture Design Course was very well received by grandparents and grandchildren alike.

Land restoration products such as high grade compost; specialized seed ball mixes; and bales of native grasses, herbs and wildflowers that can be spread over land as a mulch to help regreen desertifying areas.

Botanical medicinals have always played a role in Pueblo life. Botanicals offer greater economic return from on-site 'value-added' such as processing, preserving, extracting oils, etc.

Annual and perennial food crops grown organically at Tesuque Pueblo are currently being sold on-site and at the Farmers' Market in Santa Fe. Direct to restaurant sales and subscription farming are two other options worth exploring. Perennial crops like asparagus and wild crops like mushrooms offer a high return for work/input required.

A native plant *nursery* holds potential for economic return without excessive capital input requirements or overhead. Initially, the nursery is developed to service the ongoing restoration and forest gardening at Tesuque. Eventually, the whole Pueblo becomes one big nursery.

Permaculture demonstration farm

A one-acre community-oriented permaculture demonstration farm is planned which will also serve as a teaching facility as it develops over time. Permaculture food production systems include the following features:

- Intensive soil building techniques;
- Erosion control measures;
- Water conservation and optimization methods;
- Diversity of plants, companion planting or 'guilds';
- Beneficial insects, natural pest and disease control;
- Windbreaks, protective earthworks;
- Use of natural fertilizers made on site;
- Use of mulch to reduce evaporation and build soil;
- Incorporation of useful trees for crop, forage and fertilizer;
- Emphasis on perennial plants in combination with annual crops;
- Small animal integration for tilling and fertilizing;
- Efficient layout and utilization of space, including vertical;
- Stacking of functions, and beneficial connections;
- Conversion and reuse of waste.

An important feature of the demonstration farm will be the establishment of the nursery. Of primary importance for the demonstration farm is its function as a teaching model. Permaculture cannot be taught in a walled classroom, especially in this cultural climate. The demonstration farm is the most effective means of communicating permaculture principles as they apply to agriculture. A one-acre site for the farm has been designated by an individual tribal member. The cost to start the farm, including the first season's labour is estimated at \$10,000.

Strategic development

- Maintain long-term goal of ecologic and economic sustainability.
- Build organic alliances, worknets and trade among Native Americans.
- Use existing resources to their maximum potential.
- Focus on educating youth, not to 'get' jobs, but to create them at Tesuque.
- Create many diverse small-scale demonstrations and on-the-ground models.
- Develop comprehensive information resource system.

Proposed Budget Allocation/Grant

1997 Native American Permaculture Program

Two-week Permaculture Design Certification Course (includes teaching fees, course materials, scholarships) _____	\$10,000
Permaculture one-acre demonstration farm _____	\$10,000
Field Scholars Program (Youth) _____	\$5,000
Educational capacity building _____	\$5,000
Practical ecology workshop series _____	\$5,000
Total amount required: _____	\$30,000