

# **Fitting The Environment**

Hopi is the only place I know where corn is planted to fit the environment; the environment is not manipulated to fit the corn.

- Michael Kotutua Johnson

Over thousands of years, Hopi farmers have figured out methods for farming in an arid environment. These include placing fields in areas where they will receive the most moisture, specific planting techniques, and protecting plants from wind and pests.

Traditional Hopi agriculture is an example of dry-land farming. Snow and rainfall are vital to the success of our crops. Snow provides the soil moisture necessary for planting in early spring. It is the only moisture available until the monsoon rains arrive in late July. The summer rains bring supplemental moisture that results in corn ears and bean pods filling out.







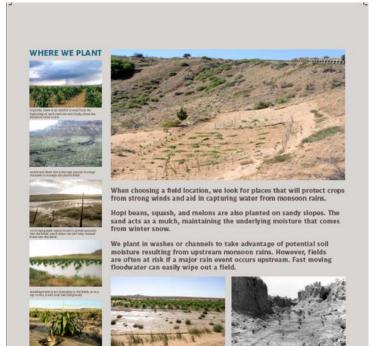






Field sizes are determined in accordance with location. The average size of a Hopi field is between one and five acres.

The natural environment gives us clues that indicate the amount of moisture in the soil. In the spring, the presence and condition of certain wild plants signal the availability of soil moisture. Based on what we see, we decide how deep to plant and how far apart to space our crop plants.







### PLANTING METHODS

We adjust our planting depths based on available soil moisture. For example, corn may be planted between six and 24 inches deep. We plant up to 20 corn seeds in one hole. Planting multiple seeds together allows corn to be grown in clumps that are spaced out. This helps protect the plants from sun and wind, as well as crows and other predators. Later, we thin the plants, pulling up all but the strongest six or seven in each clump.





We space our plants for beneficial use of available soil moisture. Corn is planted three paces (about nine feet) between clumps. Beans are planted one pace (about three feet) between plants.







# **Challenges For Hopi Farmers**

For over 2,000 years, we have tested and adapted our agricultural techniques. Our knowledge of the environment enables us to overcome the many challenges of farming without the use of pesticides, herbicides, and man-made irrigation systems which, today, are common components of commercial agriculture.

Long ago, Hopi farmers figured out how to overcome environmental challenges, such as drought, sand storms, wind, insects, and animals that threaten our plants.



### CHALLENGES





















## **Hopi Ingenuity**

Over thousands of years, Hopi farmers have honed methods for planting and protecting our crops. Notice the continuity of these techniques as shown in both the historic and contemporary photographs.

Hopi farmers have learned to adapt traditional and modern tools to fit our farming needs.

### PLANT PROTECTION

Hopi farmers protect plants from wind, heat, small animals, pests, and soil erosion. We use what is available to us, including stones, dried vegetation, and cans.





















### **Resiliency Of Traditional Knowledge And Practices**

The land is very fertile for maize and cotton and everything sown in it, because it is [a] temperate land. With little toil, the natives cultivate the sandy places that greatly conserve the moisture from the snows.

— Diego Pérez de Luiun, 1583, recorder of Autonio de Espejo's Entrada to the Hopi Pueblos (Translated by The Hopi History Project, University of Ansona Sucknost Center and Arisona State Museum.)

Despite Western influence, Hopi traditional farming practices and crop storage methods have not changed much. We continue to rely upon our holistic knowledge of the environment. This same knowledge in Western society encompasses the diverse scientific disciplines of agronomy, hydrology, ecology, and genetics.

For more than 2,000 years, Hopi farmers have saved the seeds from our ancient corn. Each year the seeds are planted in our fields using traditional techniques, resulting in beautiful multi-colored ears of corn. These are harvested for food, ceremonies, and seed. Hopi agriculture produces an abundance of diverse crops. Through careful selection of seeds and storage, this biodiversity is preserved for

















The beliefs and practices that define us as indigenous peoples are often called 'informal knowledge'. I must ask what makes the so-called 'formal knowledge' of scientists and academics more valuable?

- Utto Tanga Wondimu, 2015, Ethiopian Farmer (Story Center, num.youtube.com/user/CenterOfTheStory)

We have been planting our crops in a similar fashion for over 2,000 years. The corn, bean, and watermelon fields planted today closely resemble those of the past.















# Women's Role In Farming

The crops we raise and tend to are for the women and our children. For it is the women of Hopi who are the true stewards of Hopi society. We Hopi men say, kwakwháy (thank you) for all that they do.

- Michael Kotutma Johnson

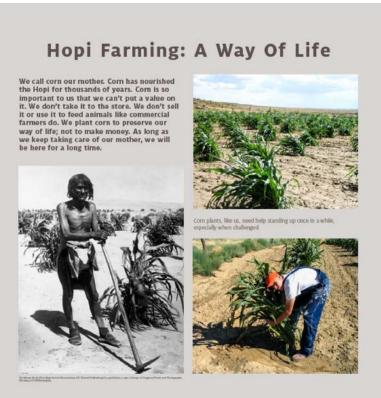
In Hopi society, women are integral to agriculture. They play a vital role before, during, and after the harvest. The women own the fields, provide the seeds to be planted, and save seeds after the harvest. The men, sometimes with help of women, plant crops, tend them, and harvest the fields.

After the harvest, the crops, are given to the women of each family. The women meticulously select seeds to save for planting the following year. They are responsible for storing and distributing the produce that is grown during each season.

The women transform the crops of corn, beans, and squash into traditional Hopi meals and for use in ceremonies. One traditional Hopi bread is called *pliki*, which is made from blue corn meal and ash.







### BENEFITS OF TRADITIONAL **FARMING FOR THE** HOPI COMMUNITY

Hopi agricultural activities serve to reinforce traditions and customs in each new generation. For us it is not about growing vegetables; it is about growing children.

#### Traditional Hopi farming:

- Helps reduce obesity because of the work required and the nutritional value of the food produced
- Reinforces Hopi culture by assigning every person a role in Hopi society
- \* Stabilizes families, because it increases sharing and no one goes hungry
- \* Is environmentally friendly
- Gives you respect for the land and what it provides











# Planting Is An Act Of Faith

To be a Hopi farmer means you plant regardless of the challenges you encounter. It is your faith, heart and dedication that will allow things to grow.

- Michael Kotutwa Johnson

I feel that the Hopi concept of sustainability and our crop diversity should be protected, preserved, and learned from. They truly are world heritage resources. Hopi agricultural world heritage resources. Hopi agricultural knowledge is based on the place we live and time-honed techniques, which are reinforced by our community practices and spiritual beliefs. Hopi farmers care for the earth as we care for a relative. For us, planting is an act of faith; we are not just putting seeds in the ground. We are re-establishing our relationship with the land in hope that it will continue to provide sustenance for future generations of Hopi people.











### Case panel goes with object case

