Introduction to PERMACULTURE
My Journey

SOILS
PLANTS
WATER
ECOLOGY

FOOD
FIBER
FUEL

SPIRITUALITY
AESTHETICS
CREATIVITY

NEEDS
PROBLEM SOLVING
COMMUNITY BUILDING
Permaculture

Elements of a Total Permaculture Design

Permaculture is a DESIGN SYSTEM which seeks to draw ideas from the universal principles of nature (ecology).

The way things work in nature can be employed in human systems to provide our needs without degrading nature.
The modern, commercial agricultural miracle that feeds us and much of the rest of the world is completely dependent on the flow, processing and distribution of oil.

The demand for food/oil continues to rise, while our ability to produce and transport it in an affordable fashion is about to drop.
Our Energy Future

Energy descent from peak oil: collapse or evolution?
Ten most recent years of world Food Price Index data from the UN Food and Agriculture Organization (FAO) and the monthly average oil price from the US Energy Information Agency (EIA). The correlation is practically 1-to-1.
Mollison and Holmgren
<table>
<thead>
<tr>
<th>Ethic</th>
<th>Description</th>
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<tbody>
<tr>
<td>CARE OF EARTH:</td>
<td>Provision for all life systems to continue and thrive</td>
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<tr>
<td>LIFE ETHICS:</td>
<td>For people to have access to essential resources needed for their existence and lives.</td>
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<tr>
<td>FAIR SHARE:</td>
<td>By paying attention to our real needs, we can set limits to population and consumption and when we have excess, we can share with others, including wildlife.</td>
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Permaculture Principles

A set of universally applicable guidelines which can be used in designing sustainable habitats. Distilled from multiple disciplines, these principles are inherent in any permaculture design, in any climate, and at any scale.

1. Relative location
2. Each element performs multiple functions
3. Each function is supported by many elements
4. Energy efficient planning
5. Using biological resources
6. Energy cycling
7. Small-scale intensive systems
8. Natural plant succession and stacking
9. Polyculture and diversity of species
10. Increasing "edge" within a system
11. Observe and replicate natural patterns
12. Pay attention to scale
13. Attitude
Using PC Ethics & Principles

Implementing the earthcare ethics in our lives:

• Consider long-term consequences of your actions; plan for sustainability.
• Use native species or naturalized species known to be beneficial.
• Cultivate small-scale, energy efficient, intensive systems.
• Plan diverse and polycultural systems that provide stability and readiness for future social or environmental changes.
• Use everything at its optimum level; recycle all wastes.
• Work where it counts; assist those willing to learn.
Implementing the earthcare ethics in our lives:

• Increase the total yield by considering the sum of system yields provided by annuals, perennials, crops, trees, animals, as well as energy saved.

• Use low-energy environmental and biological systems to conserve and generate energy.

• Bring food-growing back into towns and cities.

• Assist people to become self-reliant; promote community responsibility.

• Reforest the earth and restore soil fertility.

• See solutions, not problems.
Permaculture Tree

The idea of whole system design

LIGHT

PRODUCTS

Corporations
Business
Suburbs
Villages

SOURCES

Energy
Finances
Economics
Anthropology
Architecture

IDEA

Farms
Gardens
Plantations
Aquaculture

AIR

Botany
Biology
Agriculture
Horticulture
Geography
The Principles in Practice

work creates work
small is beautiful
everything gardens
everything is a resource
do only what is necessary
nature thrives in diversity
when in doubt, do nothing
everything works both ways
pollution is an unused resource
work with nature, not against it
the problem is often the solution
observe carefully before designing
functions stack in hierarchical order
include repeat functions in design
make the least change for the greatest effect
increasing edges increases interaction & energy
everything gives to the surrounding environment
the whole is worth more that the sum of its parts
everything receives from the surrounding environment
every element in a natural system performs many functions
the yields of a naturally balanced system are theoretically unlimited
Permaculture is Design

Conventional education pulls everything apart and looks at each element in isolation.

Permaculture makes connections. It is a land use and community planning philosophy that is based on how things are connected.

The focus is not on the elements themselves, but rather on the relationships created among them by the way we place them in the landscape. This synergy is further enhanced by mimicking patterns found in nature.
Permaculture
Elements of a Total Permaculture Design

THE DESIGN: Harmonious integration of landscape and people

LAND & NATURE STEWARDSHIP
BUILT ENVIRONMENT
TOOLS & TECHNOLOGY
CULTURE & EDUCATION
HEALTH & SPIRITUAL WELL-BEING
FINANCE & ECONOMICS
LAND TENURE & COMMUNITY

Site Components
Earth
Water
Landscape
Climate
Plants

Energy Components
Technologies
Connections
Structures
Sources

Social Components
Legal Aids
People
Culture
Trade
Finance

Abstract Components
Timing
Data
Ethics
Permaculture: Today

“Consciously designed landscapes which mimic the patterns and relationships found in nature, while yielding an abundance of food, fiber and energy for local needs”

TREMONT COMMUNITY GARDEN, BRONX, NY

VERTICAL GARDEN BY PATRICK BLANC, PARIS

THE HIGH LINE, NYC
Catch, Store, Reuse

* Cycling energy through plants, animals, structures *

- Catching a wild bee swarm and the energy stored in honey
- Many examples of wind and sunlight energy being cycled
- Swales catch rainwater and store it back into the soil
Permaculture Techniques

Observe and apply patterns found in nature

- Creative use of water
- Ponds in strategic areas
- Increase edge patterns
- Add mounds, berms, spirals, depressions, swales
- Windbreaks to protect plants
- Recycle waste from home

- Develop aquaculture
- Integrate mammals and poultry into the systems
- Produce animal forages
- Technological strategies to support design
- Poultry as source of food, pest control, soil building
Site Assessment

Vital resources and considerations

- Water resources
- Regional climate (regional)
- Microclimate (local or site scale)
- Sun exposure
- Landforms
- Watershed characteristics
- Native plants
- Slope
- Off-site considerations
Site Planning

A gradual building up of systems

Quirindi Public School Community Garden
PERMACULTURE MASTER PLAN

Permaculture Ethics
- Earth Care
- People Care
- Fair Share

Design Principles
1. Observe & interact
2. Catch & store energy
3. Obtain a yield
4. Apply self regulation & accept feedback
5. Use & value renewable resources
6. Produce no waste
7. Design from patterns to details
8. Integrate rather than segregate
9. Use small & slow solutions
10. Use and value diversity
11. Use edges & value the marginal
12. Creatively use & respond to change

Please refer to specific plans listed below for more information:
- Water Harvesting Plan
- Access Plan
- Land Use Plan
- Planting Guide

Diagram showing various garden features:
- Mediterranean Garden
- New Shelterbelt Plantings
- Creekside Classroom
- Seasonal Creek Bed
- Heart of the Garden
- Shady Work Area & Tool Shed
- Water Tanks
- Chicken Run
- Community Donation Area
- Munro St
Permaculture Techniques

- Small scale intensive systems
- Build soil fertility
- Use what is there already
- Use perennial plants where possible
- Increase plant diversity
Permaculture Techniques Example

**Plant stacking or “forest gardening”**

- 1. Canopy (large fruit & nut trees)
- 2. Low tree layer (dwarf fruit trees)
- 3. Shrub layer (currants & berries)
- 4. Herbaceous (comfreys, beets, herbs)
- 5. Rhizosphere (root vegetables)
- 6. Soil surface (ground cover, e.g., strawberries, etc.)
- 7. Vertical layer (climbers & vines)

The Forest Garden, (a 7-layer guild)
Umass PC Garden
PRESENTATION DESIGN
Marianne Greco
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CREDITS
Visuals adapted for this presentation are attributed to their authors’ original usage:
SLIDE 7: PC Tree from B. Mollison (Intro to PC).
SLIDE 11: Adapted from D. Holmgren (P:PPBS).
SLIDE 15: Adapted from D. Holmgren (www.futuresecenarios.org)
SLIDE 16: Food Price vs. Oil Price graph by Paul Chefurka (www.paulchefurka.ca)
SLIDE 19: Quirindi Public School PC Plan by Nick Ritar (www.milkwood.net/)
SLIDE 21: Adapted from diagram by Graham Burnett (http://en.wikipedia.org/wiki/Forest_gardening)
SLIDE 23: Adapted from B. Mollison (Intro to PC).
SLIDE 24: Diagram/photo by Graham Burnett (http://permaculture.wikia.com/wiki/Coppicing
SLIDE 25: PC Plan, by B. Mollison (Intro to PC).

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