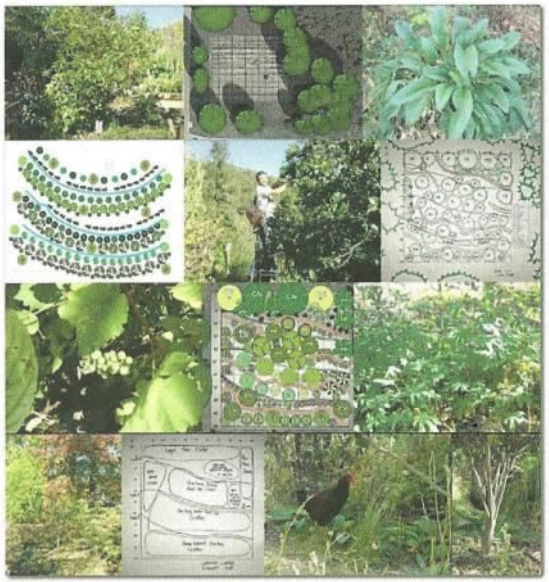


The Cultivate Kansas City Edible Forest Garden

Planning, Design & Establishment

By Daniel Dermitzel
stadtbauer@gmail.com
Funded through an Audubon - Toyota TogetherGreen Conservation Fellowship, 2010

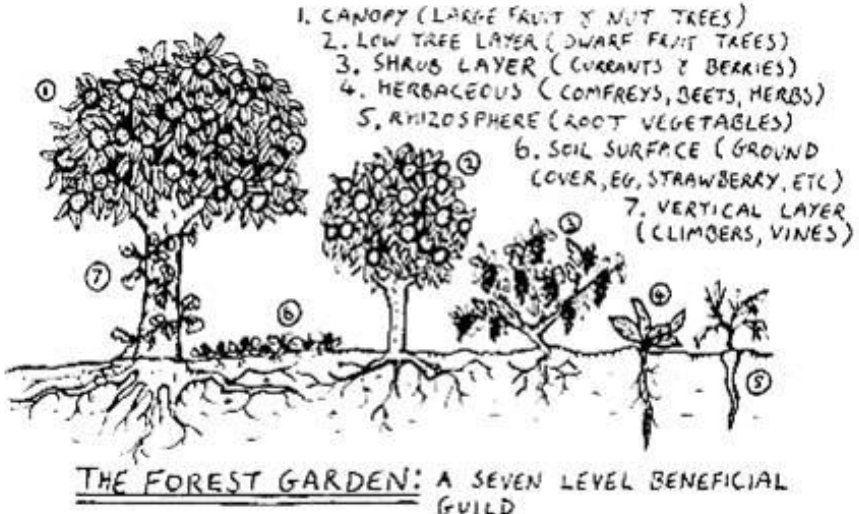
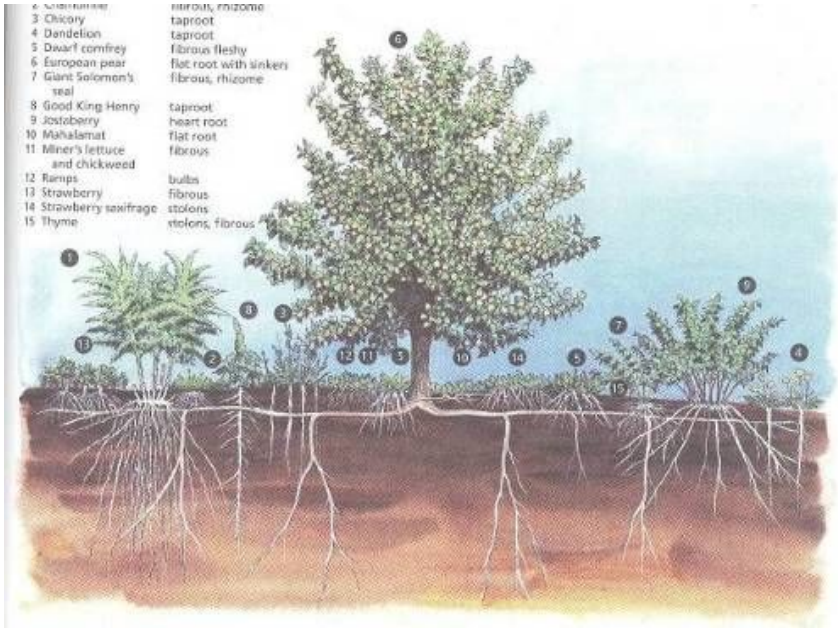


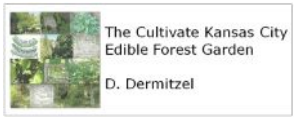
Diagram by Graham Burnett



Seven layers of a fully developed forest garden (top)
Below ground the roots occupy different layers (bottom)

From “Edible Forest Gardens” by Dave Jacke and Eric Toensmeier

Tillage-based agriculture (top) and no-till forest floor permaculture (bottom)



Edible Forest Garden Site Characteristics:

- 100’ x 100’ (just under ¼ acre)
- previously in annual vegetables
- loamy soil, no restrictive features in top 80”
- well-drained, high water holding capacity
- pH = 6.5
- organic matter: 2.6%
- surrounding tree community: sweet gums and oaks, a redbud, in the existing forest we observed hackberries, oaks, walnuts, maples, ash and elm trees, honey locust, dogwoods and more.

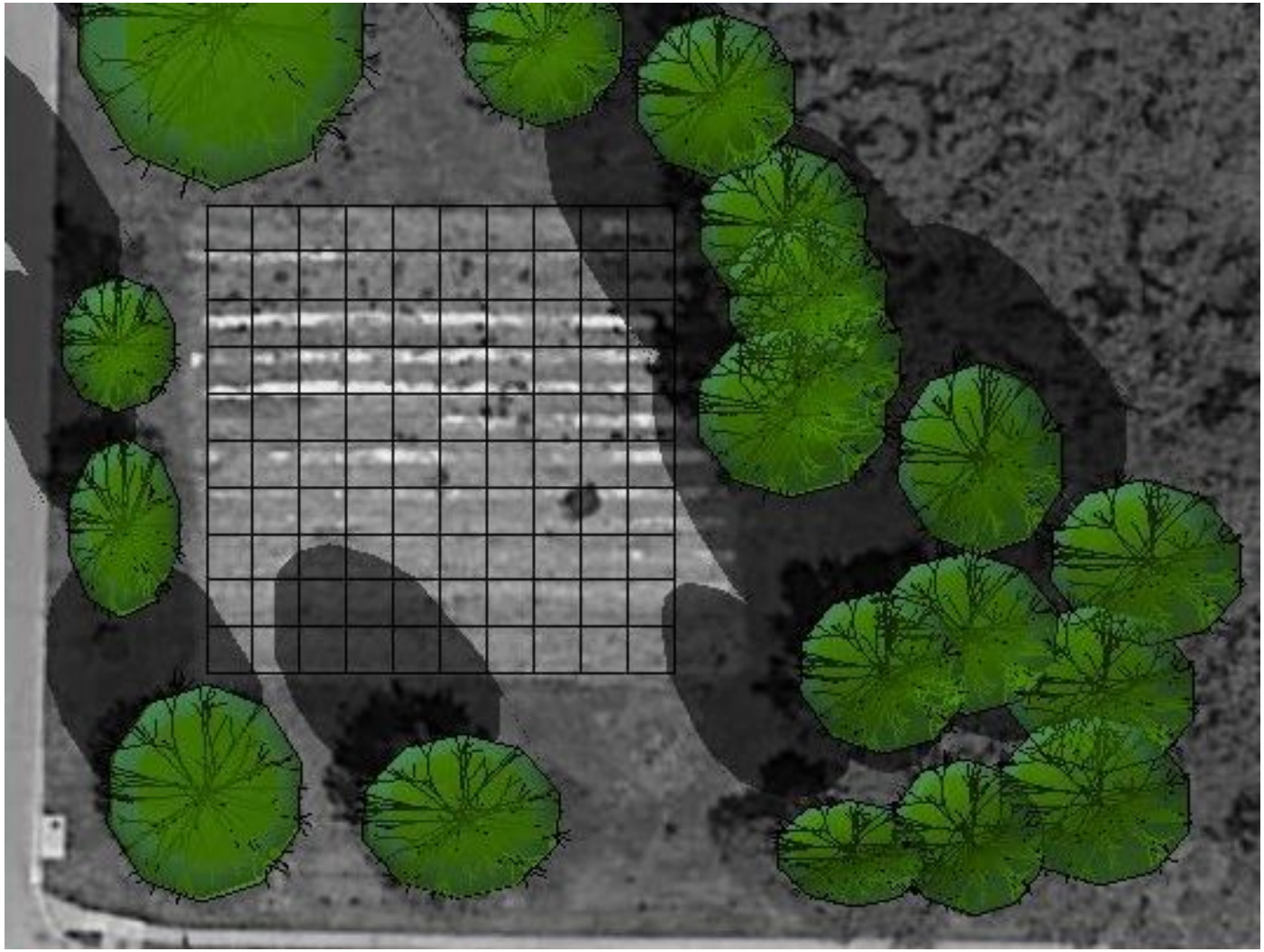
Forest garden site prior to being converted from organic vegetable cultivation (2009)

Measuring the Height of the Trees

The Cultivate Kansas City Edible Forest Garden

D. Dermitzel

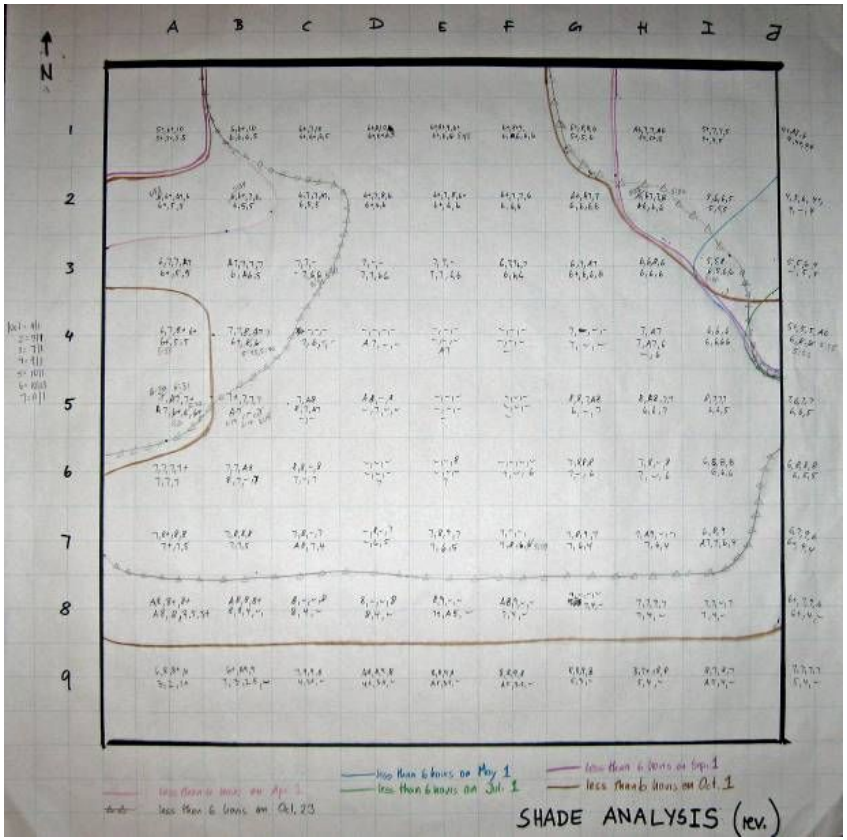
365-Day Shade Analysis Using Google Sketchup

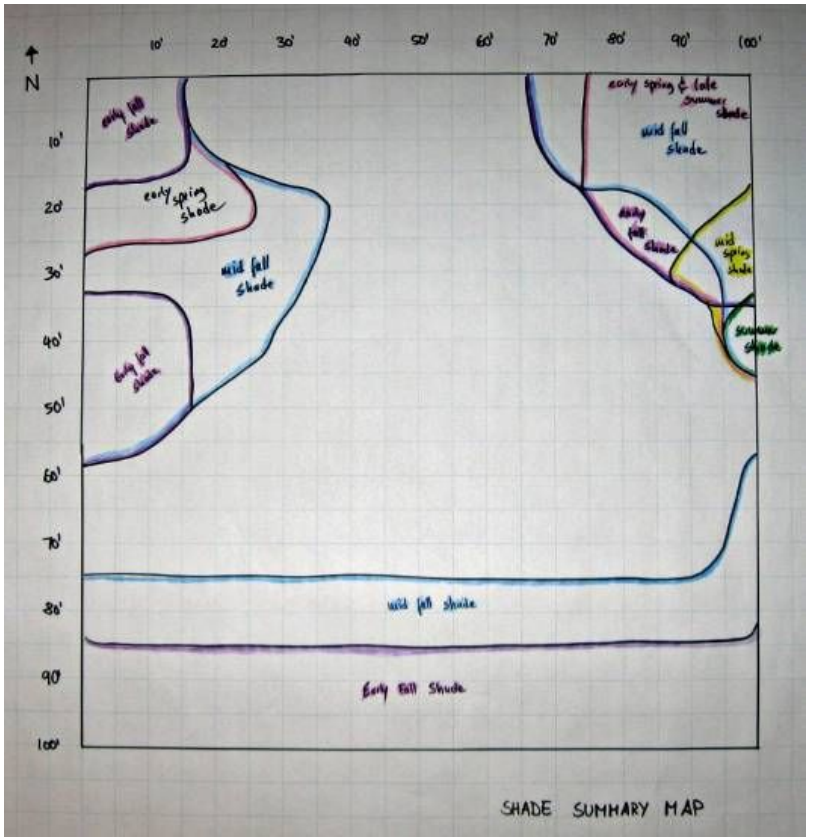


The Cultivate Kansas City
Edible Forest Garden

D. Dermitzel

Shade Analysis





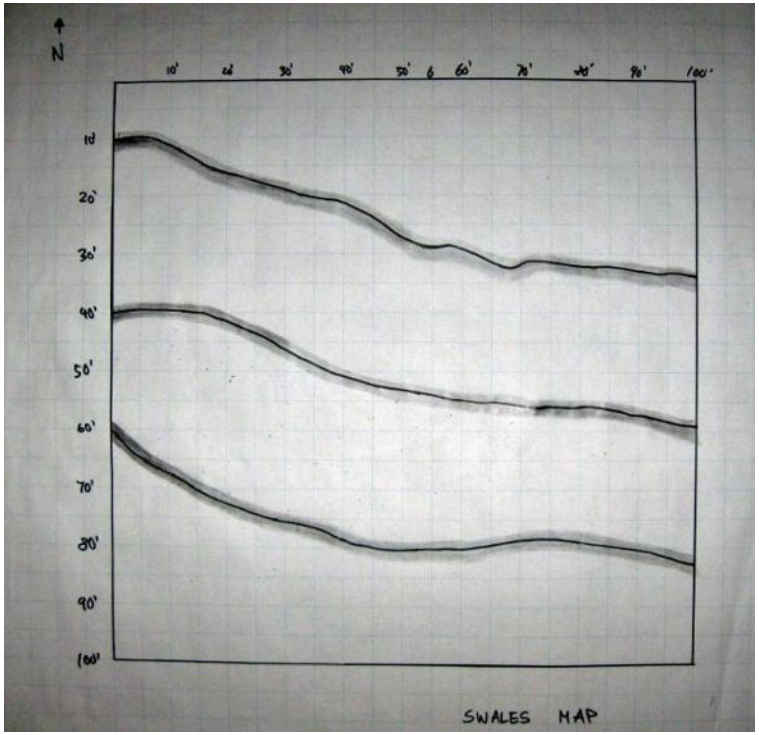
The Cultivate Kansas City Edible Forest Garden

D. Dermitzel

Forest garden site in grass and weeds in the fall of 2010

Establishment strategy: final tillage followed by seeding of white clover

7.2 % Slope: Infiltration swales can help capture water



The Cultivate Kansas City Edible Forest Garden

D. Dermitzel

Construction of Infiltration Swales

The Cultivate Kansas City
Edible Forest Garden

D. Dermitzel

Finished swales. The berms are mulched with straw to prevent erosion.

	A	B	C	D	E	G	H	I	J	K	L	M	N	O
1	Zone	ER	Latin	cutout	Common	type	pollinate	shade tolerance (Crawford)	sun preference (Jacke)	N-2	size-1 mostly OGW	size (raintree)	spacing (raintree)	size (edible landscaping)
2		E	matteuccia struthiopteris		ostrich fern	herb			part to none					
3			petasites japonicus gigan.		fuki / giant butterbur	herb		1	part to none		4-6			
4		G	bunia orientalis		turkish rocket	herb		0.5	full to part					
5		E	chenopodium bonus henricus		good king henry	herb		0.75	full to part					
6		E	chicorium intybus		chicory	herb			full to part					
7		E	crambe maritima		sea kale	herb		0.5	full to part					
8		E	helianthus tuberosus		jerusalem artichokes	herb		0.5	full to part					
9			hemerocallis spp.		daylilies (flower buds eaten in Asia)	herb			full to part					
10			levesticum officinale		lovage	herb		0.5	full to part					
11		E	mentha x piperita		peppermint	herb			full to part					
12		E	rheum cultarum		rhubarb	herb		0.75	full to part					
13			symphytum officinales		comfrey	herb		0.75	full to part					
14		E	uritca dioica		stinging nettle	herb			full to part					
15		MB 4	aquilegia canadense		columbine (flowers&stems)	herb		0.75	full to none					
16		E	asparagus officinalis		asparagus	herb		0	full					18" spacing
17		G	borago officionalis		borage	herb			full					
18			bunium bulbocastanum		earth chestnut / pig nut	herb		0.5	full					
19		E	chamaemelum nobile		chamomile	herb			full					
20		E	fragaria ssp		strawberry	herb	A/B1	0.75	full		6" to 8"			
21		rVa	lupinus perennis		lupine	herb			full	y				
22		E	montia perfoliata		miner's lettuce	herb			full					
23		G,E	allium ssp		potato onion, welsh onion, ramps, egypt.	herb								
24			hablitzia tamoides		caucasion spinach	herb		0.75						
25		E	oxyria digyna		sorrel	herb								
26		E	pimpinella saxifraga		burnet saxifrage	herb								
27		E	polygonatum biflorum		solomon's seal	herb								
28		E	rumex acetosa		french sorrel	herb								
29		E	taraxacum officinale		dandelion	herb								
30		f	asarum canadense		wild ginger (MB 4 stars) NOT SAFE?	p-s herb		1	part to none					
31		E	gaultheria procumbens		wintergreen	p-shrub	A		part to none			0.5'	1'	0.5 to 1 spacing
32		F	rubus flagellaris		dewberry (MB 2 stars)	p-shrub	A		full to part					
33		E	vaccinium macrocarpon		cranberry	p-shrub	A,per12		full					
34		G	aronia melanocarpa	y	black chokeberry	shrub	A	0.75	full to part		3-6			
35		U	decaisnea forgesii		blue bean	shrub	A	0.5	full to part					
36		G	eleagnus multiflora	y	goumi	shrub	B1	0.75	full to part	yes	5-6	6	7 (4' in hedge)	
37	6?	G	gaultheria shallon	y	salal	shrub	A	1	full to part			sun 2, shade 5+	sun 2, shade 4	
38		G	gaylussacia baccata		black huckleberry	shrub	B		full to part					
39		G	hippophae rhamnoides	y	sea buckthorn (sea berry)	shrub			full to part	yes				

Plant selection: first a “universe” of approximately 80 plants was compiled from which to choose. Criteria for inclusion: “edibility rating” & hardiness. Plant budget for trees and shrubs: $3,200.

The Cultivate Kansas City Edible Forest Garden

D. Dermitzel

Designing the Forest Garden

TABLE 2.2. Summary of the edible-forest-garden pattern language

Patterns at the Landscape Scale

Fit the forest garden site into the larger context so that it helps create these larger patterns, and these larger patterns support each forest garden site.

1 Productive Landscape Mosaic
2 Islands and Corridors

Patterns at the Site Scale

Fit the forest garden into the living, breathing, working landscape of the site so that it generates the greatest ease, health, and diversity.

3 Patterns That Arise
4 Habitat Diversity
5 Site Repair
6 Outdoor Living Rooms
7 Zones and Sectors
8 Zones of Water Use

Patterns *of* the Garden

Define the garden's fundamental structure using a more or less formal geometry, …

9 Dynamic Patches
10 Mandalas

… or by patterning the forest garden so that it mimics natural ecosystem architecture and composition, …

11 Temporary Shrublands
12 Minithickets
13 Oldfield Mosaics
14 Woodland Gardens
15 Mature-Forest Forest Gardens
16 Gaps and Clearings
17 Forest Gardens in the Woods
18 Shifting-Mosaic Forest Gardens

… or by applying forest-gardening principles to the cultural landscape, maintaining or mimicking aspects of that landscape, but transforming it at its essence.

19 Copses
20 Forest Edges
21 Microforest Garden
22 Suburban Landscape Mimic

Patterns *in* the Garden

Define the landform and circulation patterns before defining vegetation patterns.

23 Pits and Mounds
24 Definite Pathways
25 Strategic Materials Depot
26 Paths and Nodes
27 Rootlike Path Geometries
28 Keyhole Beds
29 Pathway Width

Determine your establishment, reestablishment, and management patterns.

30 Patch Disturbance and Regeneration
31 Instant Successions
32 Nuclei That Merge
33 Relay Plantings
34 Disturbance and Maintenance Regimes

Define the overall structural goals that help you select the organisms, species, and varieties you want.

35 Diversity of Life Forms
36 Extraordinary Edibles Everywhere
37 Gourmet Decomposers
38 Three-Layer Minimum
39 Lumpy Texture
40 Layers of Harvest
41 Staggered Harvests, Clustered Harvests
42 Nectaries Always Flowering
43 Native Species

Define species placement patterns within the larger patterns defining the structure of the garden as a whole.

44 Polyculture Patches
45 Pockets of Production
46 Flower-Petal Beds
47 Cluster Planting
48 Cross-Pollination Clusters
49 Ground-Cover Carpets
50 Drifts, Clumps, and Scatters
51 Functional Plants Throughout
52 Expansive Plant Containers

Garden Elements

Embellish and enrich the garden you have created with specific elements that bring higher diversity and functionality.

53 Living Soil
54 Habitat Elements
55 Fruitful Footpaths
56 Mulch
57 Dead Wood

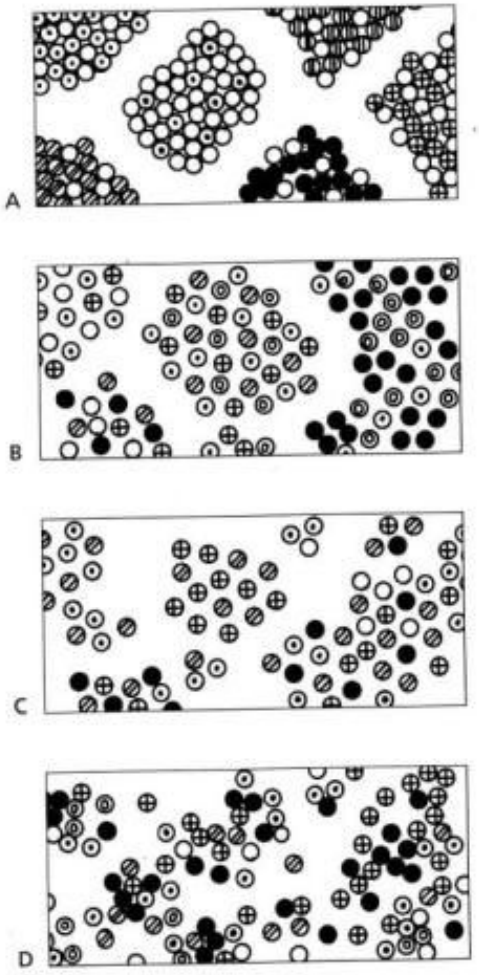
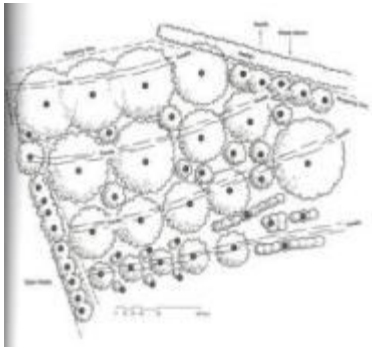
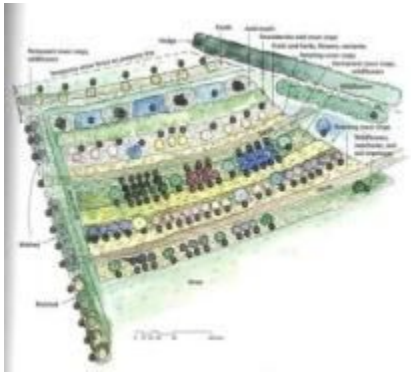


FIGURE 2.14A–D. Different patterns of tree distribution for woodland gardens encourage structural diversity. (a) Tight clumps of one or a few species with consistent spacing within and between clumps whose total cover value exceeds 40 percent. (b) Clumps of varied sizes and species mixtures, but with consistent spacing between trees. (c) Varied clump size and spacing between clumps. (d) Varied clump size, spacing between trees, and spacing between clumps. Similar patterns can be used for shrubs and herbs. *Adapted from Rodwell and Patterson, 1995.*





The Cultivate Kansas City Edible Forest Garden

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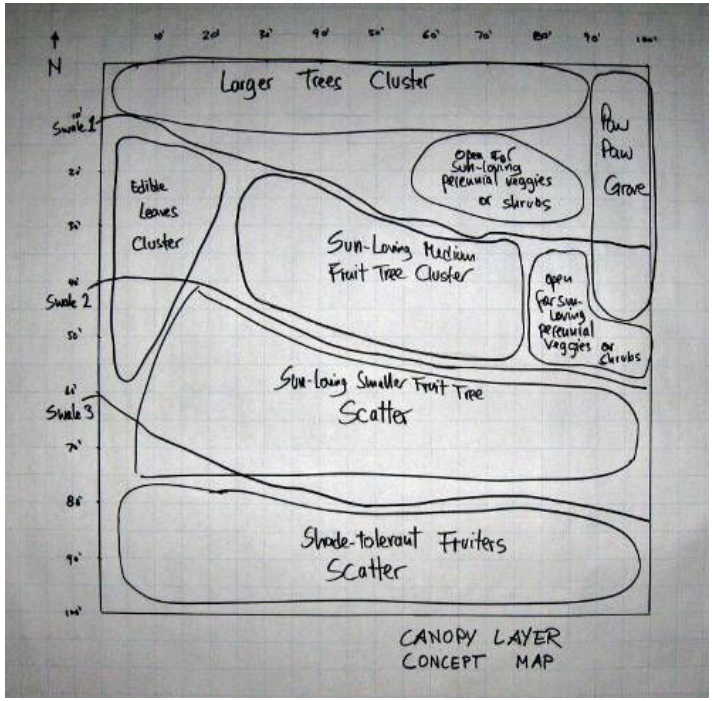
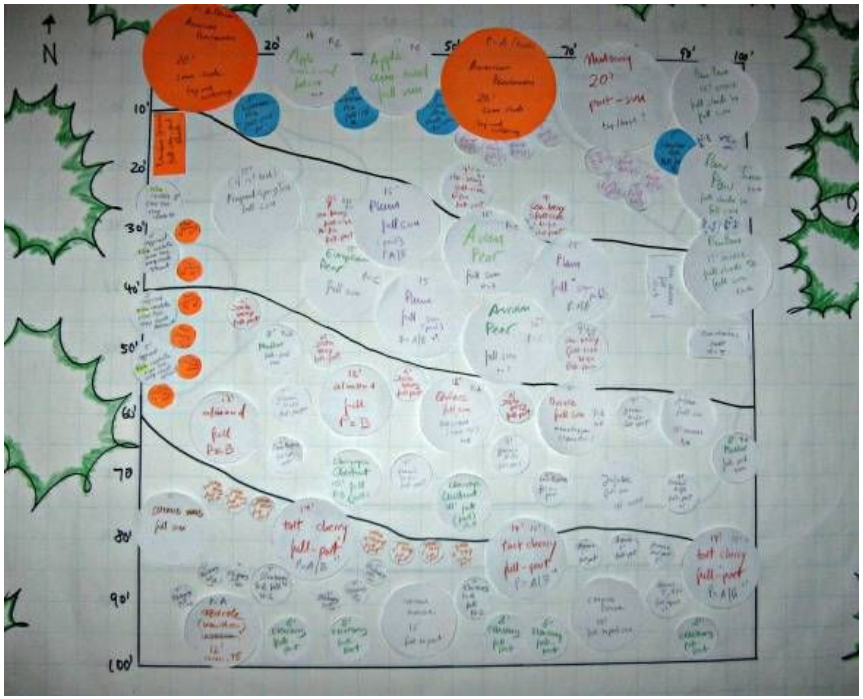
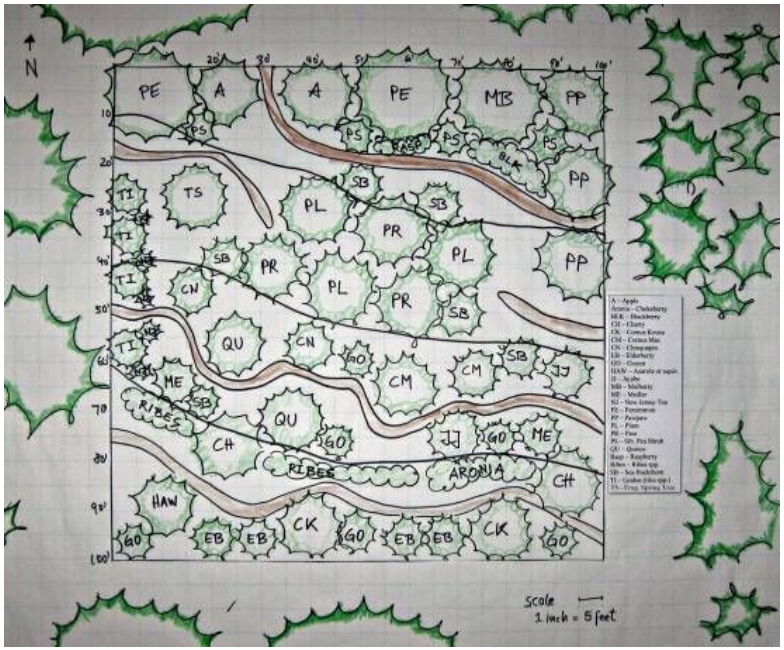
From "Edible Forest Gardens" by Dave Jacke and Eric Toensmeier

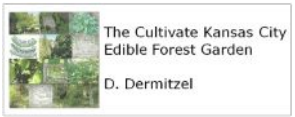


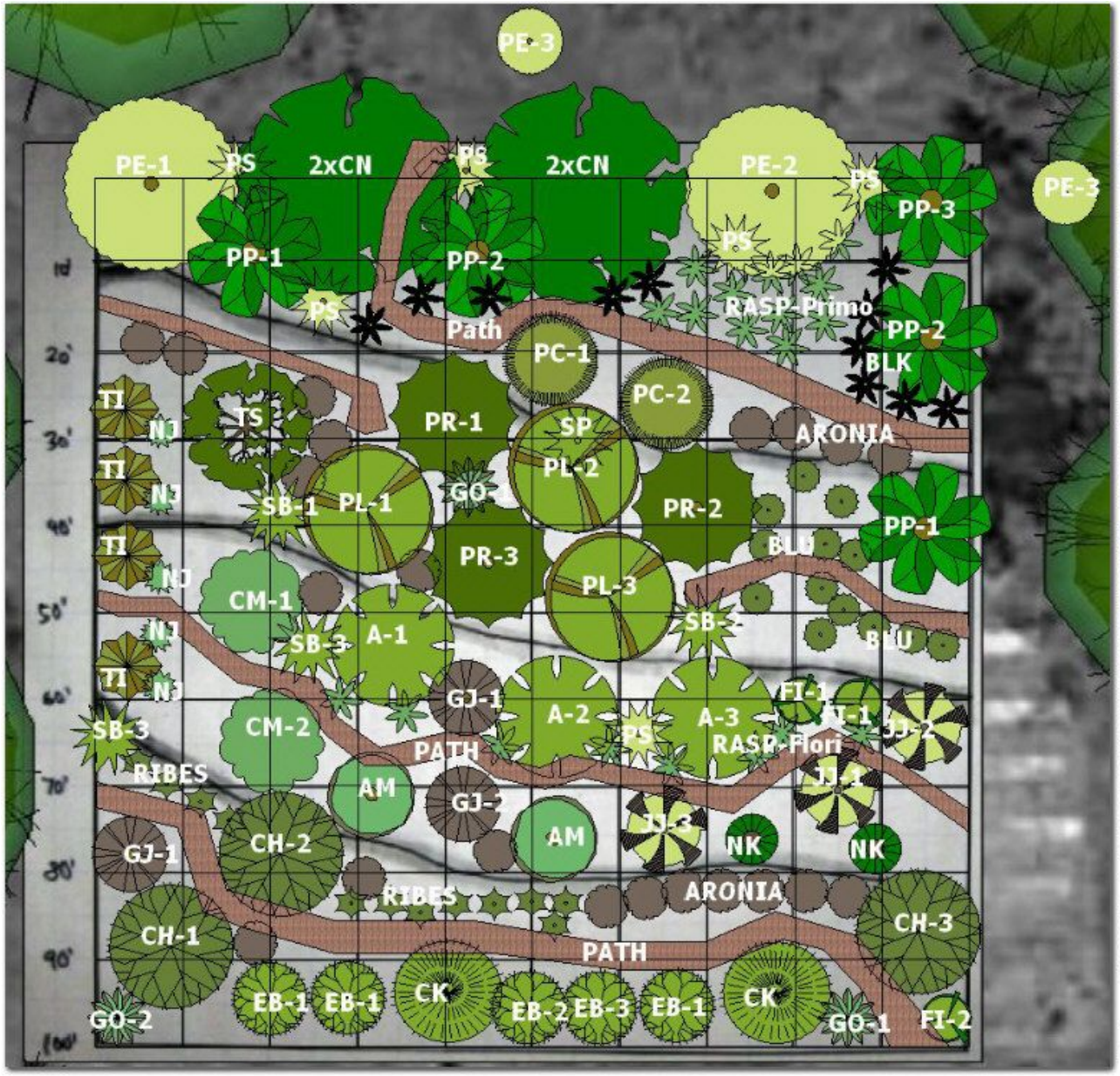




Forest garden design process:

1) *Concept Map (top left)*
2) *Using paper cutouts to experiment with plant arrangements (top)*
3) *Finalizing design (left)*





A - Apple (1=Redfree, 2=Liberty, 3=Enterprise)
AM - Serviceberry (Autumn Brilliance)
*ARONIA - Chokeberry (Viking & Nero)
*BLK - Blackberry
*BLU - Blueberry
CH - Tart Cherry (1=Jubileum, 2=Danube, 3=Montmorency)
CK - Cornus Kousa (Big Apple)
CM - Cornelian Cherry (1=Pioneer, 2=Red Star)
CN - Chinese Chestnut
EB - Elderberry (1=Nova, 2=York, 3=Netzer)
FI - Fig (1=Hardy Chicago, 2=unknown)
*GJ - Goji Berry (1=Crimson Star 2=Phoenix Tears)
GO - Goumi (1=Sweet Scarlet, 2=Red Gem)
JJ - Jujube (1=Lang, 2=Li, 3=Xu Zhou)
NJ - New Jersey Tea
PC - Peach (1=Redhaven, 2=Reliance)
PE - Persimmon (1=Meader, 2=Early Golden, 3=male)
PP - Pawpaw (1=Penn Golden, 2=Davis, 3=Mango)
PL - Plum (1=Shiro, 2=Superior, 3=Toca)
PR - Pear (1=Moonglow, 2=Harrow Sweet, 3=Potomac)
PS - Sib. Pea Shrub
QU - Flowering Quince
*Rasp - Raspberry
*Ribes - Ribes spp.
SB - Sea Buckthorn (1=Golden Sweet, 2= Sirola, 3=male)
TI - Linden (tilia cordata)
TS - Toona Sinensis

* planted in Sprin
(all others planted

The Cultivate Kansas City Edible Forest Garden

D. Dermitzel

The canopy and shrub layers of our food forest (version 5, February 2012).

Marking plant and path locations in the field

The first tree of the new edible forest garden is planted in Spring 2011: a Jujube or "Chinese Date"

More trees are planted and the clover grows strong

A Workshop On Designing

Edible Forest Gardens

Steve Moring
Vajra Farm

Matt Bunch
Powell Gardens

Daniel Dermitzel
KCCUA

Michael Almon, Forest Floor Permaculture

Cathy Bylinowski
KCCUA

Steve Mann, Platte Prairie Ecosystems Mgmt

Sunday, May 22, 2011
12:30 PM – 5:30 PM

Please Note:

To accommodate a few more participants, we will now hold the workshop at the Ramada at 7240 Shawnee Mission Parkway, OP, KS, 66202 and then travel to the nearby forest garden site together. Registration is required for this event due to space limitations. Please email daniel@kccua.org for all details. Thank you!

For urban farmers, gardeners and landscape designers interested in growing productive edible greenspace.

See the step-by-step design process behind KCCUA's ¼ acre experimental forest garden.

Learn about this sustainable method of perennial food production & start planting the productive green landscapes of tomorrow's urban food systems.

Center for Urban Agriculture

topics covered:

- forest ecology
- site selection
- design approach
- plant selection
- getting the forest garden established
- case studies and local resources
- design exercise

with participation and help from:

POWELL GARDENS

Kaw Permaculture Collaborative

Suggested Donation: $ 10.00
(includes materials)
- space is limited -
please register through daniel@kccua.org
all information at www.kccua.org.

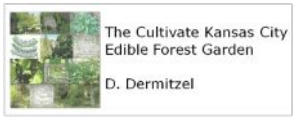
with generous funding from:

Together Green

The Cultivate Kansas City Edible Forest Garden

D. Dermitzel

Edible Forest Garden Design Workshop 2011



The forest garden in 2012

The Cultivate Kansas City Edible Forest Garden

D. Dermitzel

The forest garden in 2012

The forest garden in June of 2012

The Cultivate Kansas City Edible Forest Garden

D. Dermitzel

The forest garden in 2014

The forest garden in the fall of 2012

The forest garden in the fall of 2012

The forest garden in the fall of 2012

The forest garden in the summer of 2014

The Cultivate Kansas City Edible Forest Garden

D. Dermitzel

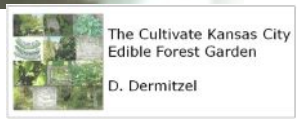
The forest garden in the summer of 2014

The forest garden in the summer of 2014

The forest garden in the summer of 2014

The forest garden in the summer of 2014

The forest garden in the summer of 2014



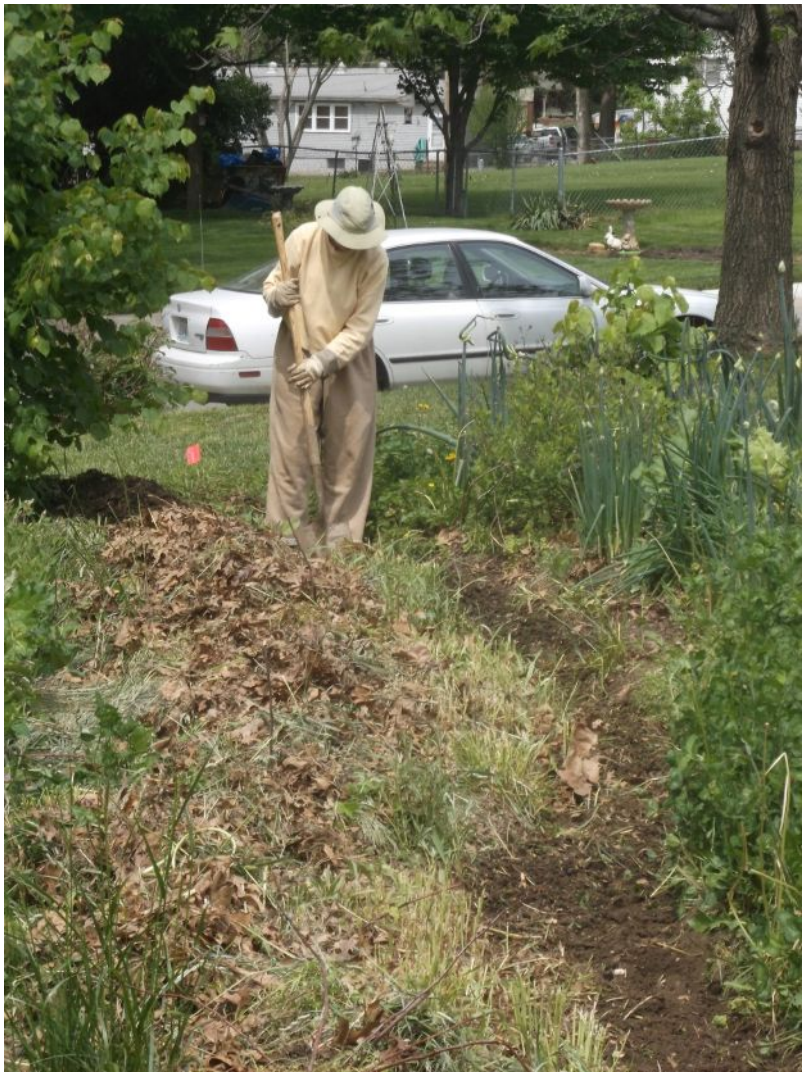
The forest garden in the summer of 2014

The Cultivate Kansas City
Edible Forest Garden

D. Dermitzel

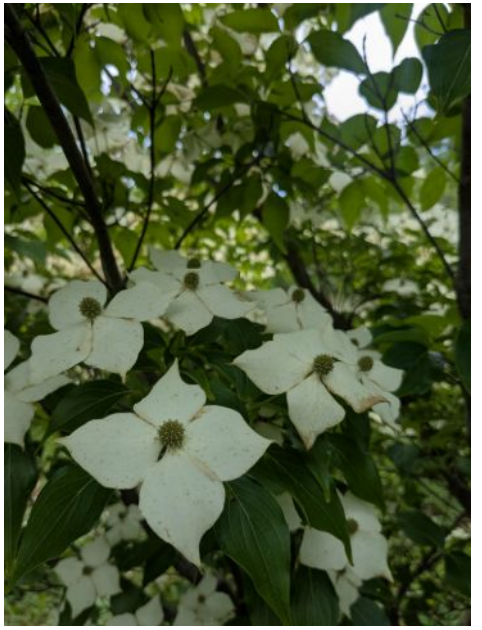
The forest garden in the summer of 2014

The forest garden in 2014



Working mindfully in the forest garden 2014

Fifteen years later -- the food forest in 2025

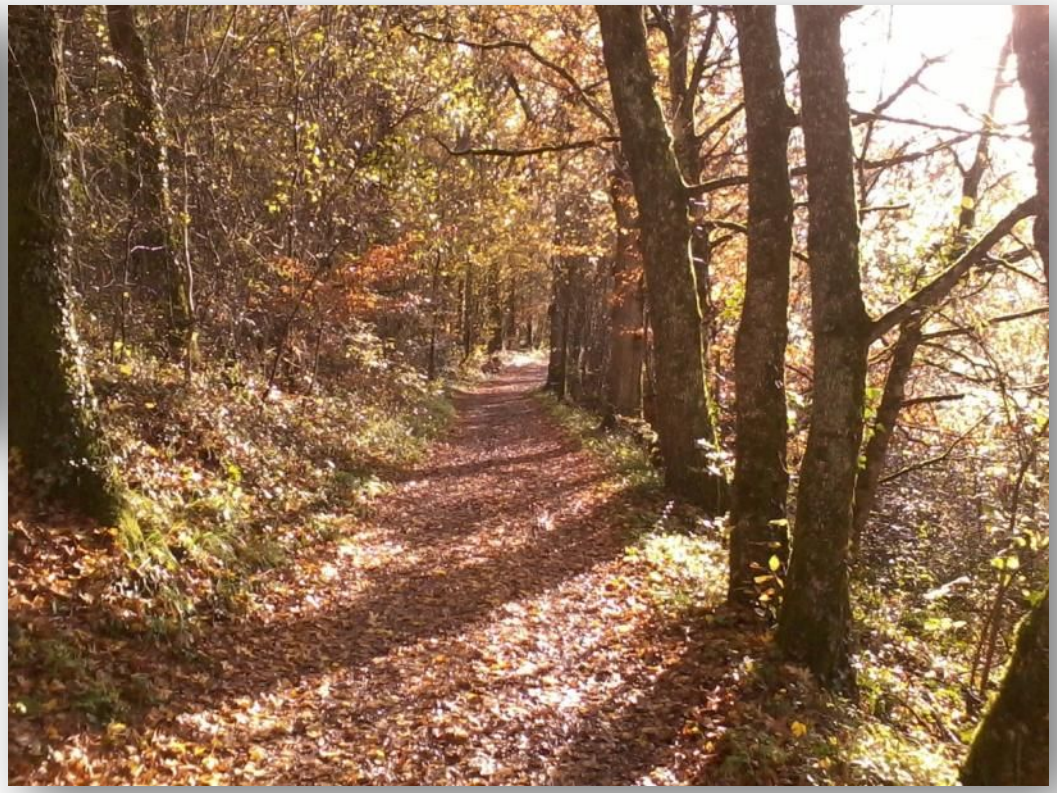


Fifteen years later -- the food forest in 2025

Thank you!

www.danieldermitzel.com
www.gamelanjourney.net

For Information on Mindfulness Practice
in the Tradition of Thich Nhat Hanh



www.plumvillage.org