

DYNAMICS ECOLOGICAL DESIGN

Site Planning • Landscape Design • Construction • Education • Permaculture

David K. Jacke • 56 High St. • Keene, NH • 03431 • (603) 357-8899 • dynamicsecodesign@earthlink.net

Table of Contents

EDIBLE FOREST GARDENS: VOLUME 1:

ECOLOGICAL VISION & THEORY FOR TEMPERATE-CLIMATE PERMACULTURE

INTRODUCTION: AN INVITATION TO ADVENTURE

What Is an Edible Forest Garden?
Gardening LIKE the Forest vs. Gardening IN the Forest
Where Can You Grow a Forest Garden?
The Garden of Eden: It Sounds Great, But Is It Practical?
An Invitation to Adventure

PART ONE: CONTEXT AND VISION

1: THE FOREST AND THE TREES

The Primal Forest: A Remembrance
Gardening the Forest
Forest Remnants
Feature Article 1: Natives and Exotics: Definitions and Questions
Suburban Ecology
Gardening in the Industrial Image
Lessons Learned
Box 1-1: Shifting the Burden to the Intervenor

2: VISIONS OF PARADISE

Study of the Household: Ecology Defined
Tales of Mimicry
Advantages of Forest Mimicry
The Limitations of Forest Mimics
Spanning the Gamut: Images of Forest Gardens
Goals of Forest Gardening
Revision—the Garden of Eden?
Box 2-1: The Principle of Functional Interconnection

CASE STUDY 1: CHARLIE'S GARDEN

PART TWO: ECOLOGY

3: THE FIVE ELEMENTS OF FOREST ARCHITECTURE

Vegetation Layers
Feature Article 2: With All These Layers, What Do I Grow in the Shade?
Soil Horizons
Density
Patterning
Diversity
Summary
Box 3-1: The Principle of Relative Location

CASE STUDY 2: ROBERT'S GARDEN

4: SOCIAL STRUCTURE: NICHES, RELATIONSHIPS AND COMMUNITIES

Species, Species Niches, and Species Relationships

Multi-Species Interactions: Frameworks of Social Structure

Feature Article 3: Natives and Exotics, Opportunists and Invasives

Social Structure Design: Strategies and Anchors

Chapter Summary

Box 4-1: Niche Analysis: Everybody Does It

Box 4-2: The Principle of Multiple Functions

Box 4-3: The Principle of Stress and Harmony

Box 4-4: The Competitive Exclusion Principle

Box 4-5: The Cropping Principle

Box 4-6: The Principle of Redundancy

Box 4-7: The Polyculture Partitioning Principle

Box 4-8: Ecological Analogs

5: MAKING A LIVING IN THE DARK: STRUCTURES OF THE UNDERGROUND ECONOMY

The Anatomy of Self-Renewing Fertility

Feature Article 4: Parent Materials: The Soil's Nutritional Constitution

Plant Roots: Engines of the Underground Economy

The Soil Food Web

Summary: Dabbling In The Underground Economy

Box 5-1: The Concept of Limiting Factors

Box 5-2: Specific Replant Disease

6: SUCCESSION: FOUR PERSPECTIVES ON VEGETATION DYNAMICS

Classical Linear Succession and Climax

Progressive Succession to Shifting Mosaic Steady State

Patch Dynamics: Out of Line and Out of Balance

A "Unified Oldfield Theory": Successional Causes

Feature Article 5: "Invasive" Plants and the Unified Oldfield Theory

Succession Design: Using the Four Models

Summary: The Simultaneity of the Four Models

Box 6-1: The Principle of Allocation

Box 6-2: The Law of Vegetation Dynamics

Box 6-3: The Law of Dynamic Tolerance

CASE STUDY 3: E.F. SCHUMACHER FOREST GARDEN

CONCLUSION: ELEMENTS, DYNAMICS, AND DESIRED CONDITIONS

APPENDICES

Appendix 1: Forest Gardening's "Top 100" Species

Appendix 2: Plant Hardiness Zone Maps

Appendix 3: Publications and Organizations

BIBLIOGRAPHY

GLOSSARY

GENERAL INDEX

Table of Contents
EDIBLE FOREST GARDENS: VOLUME 2:
ECOLOGICAL DESIGN & PRACTICE
FOR TEMPERATE-CLIMATE PERMACULTURE

INTRODUCTION: A FOREST GARDENER'S TOOL KIT

1: ISSUES AND STRATEGIES IN FOREST GARDEN DESIGN AND MANAGEMENT

Design Elements
Ecosystem Dynamics
 Feature Article 1: Beneficial Wildlife Habitat Principles
Desired Conditions
Summary

2: A FOREST GARDEN PATTERN LANGUAGE

What is a Pattern Language?
A Forest Garden Pattern Language
 Box 2-1: The Oak Beams of New College, Oxford

3: DESIGN PROCESSES 1: OVERVIEW, GOALS, AND ASSESSMENTS

Design Process Overview
Clear Intentions: Articulating Your Gardening Goals
Basic Mapping For Landscape Design
Site Analysis and Assessment
 Feature Article 2: Reading Your Soil Horizons
Chapter Summary
 Box 3-1: Designing Your Design Process
 Box 3-2: Tools of the Designer's Trade
 Box 3-3: Bubble Diagramming
 Box 3-4: The Scale of Permanence
 Worksheet 1: Desired Species Niche Analysis Form
 Worksheet 2: Existing Species Niche Analysis Form

4: DESIGN PROCESSES 2: THE DESIGN PHASE

Four Stages and Four Realms
Design Phase How-To
 Feature Article 3: Groundcover Polycultures
Chapter Summary

5: SITE PREPARATION

Site Preparation
A Rogue's Gallery of Challenging Site Conditions
A Hero's Gallery of Site Prep Strategies and Techniques
 Feature Article 4: Mulch
Chapter Summary

6: GARDEN ESTABLISHMENT

The Order of Events

Staking-Out

Acquiring Plants

Organizing Tools, Materials, and Helpers

Planting Day

Aftercare: Proactive Plant Establishment

7: MANAGEMENT, MAINTENANCE, AND COEVOLUTION

Tools of the Trade

Management

Grunt Labor and Its Fruits: Maintenance and Harvesting

Coevolution: The Future of Forest Gardening

EPILOGUE: A STORY OF ROBERT

APPENDICES

INTRODUCTION

APPENDIX 1: PLANT SPECIES MATRIX

APPENDIX 2: SPECIES BY USE TABLES

APPENDIX 3: SPECIES BY FUNCTION TABLES

APPENDIX 4: SPECIES OF CONCERN

APPENDIX 5: NICHE REQUIREMENTS OF BENEFICIAL ANIMALS

APPENDIX 6: PLANT HARDINESS ZONE MAPS

APPENDIX 7: RESOURCES

BIBLIOGRAPHY

GLOSSARY

INDEX OF LATIN SYNONYMS

INDEX OF COMMON AND LATIN NAMES

GENERAL INDEX