

**TABLE 4.1.** Some elements of species niches.**Core Strategy**

- Key mode of adaptive success (e.g., spring ephemeral herb; canopy tree; large, hooved browser; ground-nesting insectivorous bird; etc.)
- Ruderal, competitor, or stress tolerator (see below)

**Context**

- Ecogeography (climate, native region, habitat)
- Associates (coevolutionary neighbors)
- Predators

**Needs**

- Tolerances and preferences (water, soil, light, pH, hardness, etc.)
- For animals: food and shelter (nesting habitat, winter habitat, etc.)
- Allies (pollinators, dispersal agents, nutrient gatherers, etc.)

**Products**

- Products directly useful to humans: fruit, leaves, fiber, dye, etc.
- Products useful to other species: nectar, shelter
- Other products (often considered "wastes"): dead leaves, twig and bark sheddings, etc.)

**Characteristics**

- Evolutionary history/genetics (taxonomy)
- Form (morphology): size, shape, habit, root pattern, etc.

**Functions, Behaviors, and Influences**

- Rate and means of spread and establishment, growth rate
- Nutrient dynamics: nitrogen fixation, dynamic accumulation
- Seasonal behaviors (time of flowering, leaf drop, etc.; for animals: time of emergence, number of larval stages, length of gestation, etc.)
- Nuisances, poisonousness

**EUROPEAN PEAR (*Pyrus communis*)**

**Core strategy:** An animal dispersed competitive stress tolerator of sunny mid- to late-succession woodland canopies.

**Context:**

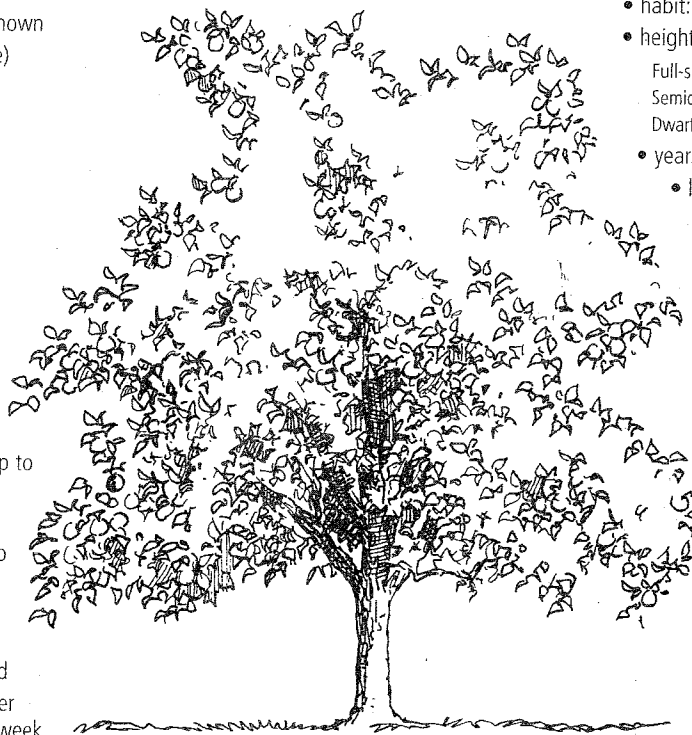
- native region: temperate Europe, W. Asia
- native habitat: unknown
- native associates: unknown
- family: Rose (Rosaceae)

**Predators:**

- generalist herbivores
- codling moth
- pear psylla
- fireblight
- pear scab

**Needs, tolerances:**

- full sun
- soil pH 6.0–6.5
- hardiness zones 4–9
- moist, well-drained soil
- prefers moderately deep to deep soils
- tolerates clay
- prefers soils with low to moderate nitrogen content
- high calcium demand
- yields best when pruned
- needs 2–3 gal. water per sq. ft. of root zone per week
- cross-pollinators needed

**Characteristics:**

- form: upright tree
- habit: standard tree, flat-rooted with sinkers
- height x width:
 

|            | feet          | meters     |
|------------|---------------|------------|
| Full-size: | 25–40 x 25–30 | 8–12 x 8–9 |
| Semidwarf  | 15–20 x 15–20 | 5–6 x 5–6  |
| Dwarf      | 10–15 x 15    | 3–5 x 5    |
- years to bearing: 4–7
- life span:
 

|            |             |
|------------|-------------|
| Full-size: | 50–75 years |
| Dwarf:     | 15+         |

**Products:**

- fruit: pome; late summer and fall ripening
- yield:
 

|            | bushels | liters |
|------------|---------|--------|
| Full-size: | 2–4     | 70–140 |
| Semidwarf  | 0.5–1.5 | 18–36  |
- white flowers: spring
- glossy green foliage
- moderately dense to dense shade

**Functions, behaviors:**

- animal dispersed
- can naturalize
- flowers may die in early frosts
- leafs out after flowering
- drops leaves midautumn

**FIGURE 4.1.** Niche analysis of the European pear (*Pyrus communis*).