Bur oak planting and care guide

Bur oak (*Quercus macrocarpa*) is a large native Midwestern oak for long-term shade and wildlife habitat. It produces acorns with distinctive fringed caps. These are **variable seedlings**: growth, crown shape, acorn size, crop quantity, and drop timing will differ.

Choose a permanent site

Choose **full sun** and enough space for a large crown. The Morton Arboretum lists typical mature height and spread around **70-80 feet**, with slow to moderate growth. Keep it well away from overhead utilities, buildings, and other places where a broad tree will be a problem. Crowded habitat plantings need a long-term plan for competition and thinning; do not mistake close initial spacing for permanent spacing.

Preferred soil: Moist, fertile, well-drained ground supports best growth. Bur oak tolerates aerated clay, rocky ground, and neutral-to-alkaline soils; no numeric pH optimum or direct carbonate response is verified in the checked sources. Do not lime merely because it tolerates alkalinity. Iowa State describes floodplain-to-dry-upland occurrence, not a safe flood-duration threshold; habitat alone does not establish tolerance of prolonged saturation.

Roots and water: A long taproot helps established trees withstand drought where soil permits deep rooting. Shallow bedrock, dense restrictive layers, and compaction reduce access to stored water; a taproot does not guarantee a particular rooting depth. Drought tolerance is not permission to neglect a newly planted seedling. Avoid persistently waterlogged planting holes and future grade changes around roots. Prolonged saturation deprives roots of oxygen; severe drought can kill seedlings and stress older trees.

Read the soil map before planting

Use Soil Location Info to screen a planting spot, then inspect it and obtain a soil test. Survey estimates are not measurements at the planting hole; an unrecorded value does not mean no limitation.

- **pH by depth:** Compare surface and deeper layers, not just topsoil. Alkaline subsoil is less concerning for bur oak than for white or swamp white oak, but drainage still matters.
- **Wetness and rooting:** Read drainage, seasonal water-table depth, flooding, ponding, bedrock, and rooting restrictions together. Prefer an aerated root zone; dry-ground tolerance does not make stagnant water suitable.
- **Available water storage (AWS):** The map's upper-100-cm storage estimate is potential plant-available water, not today's moisture or an irrigation allowance. Low storage or shallow usable soil means closer drought checks, especially before roots spread.

Plant your potted seedling

We sell and recommend **potted seedlings**. Our planting method requires a **square hole, not a round one**. A wider hole is preferred, not required; it must fit the root ball without squeezing it. Dig no deeper than the root ball in its pot, and shallower as needed to leave the **top of the root ball slightly above surrounding ground level**. Rest it on firm soil so it does not settle too deep. Water the pot before removal; support the root ball, not the stem, and keep it together. Check for circling roots rather than forcing a root-bound ball into the hole. Backfill around the sides with native soil, taper soil to cover exposed side roots, and water thoroughly. Keep the root flare exposed; do not pile soil or mulch over the ball's top or against the trunk. Check both the root ball and nearby soil for moisture while roots establish.

Water, mulch, and protect

- **Check moisture:** Inspect the rooting area once or twice a week, more often during hot, windy weather. Water when the root-zone soil begins to dry, wetting the roots and nearby soil without keeping them saturated. Continue checks until the ground freezes. Dry spells may require supplemental water for several establishment years.
- **Reduce competition:** Keep grass and weeds back and use a broad ring of **2-4 inches of mulch**, tapering it away from the trunk and leaving the flare clear. Keep mowers and string trimmers away from bark.
- **Prevent animal damage:** Protect against deer browsing and antler rubbing with an effective tall cage or maintained shelter. Guard the lower stem against rabbits and rodents; inspect for nests, entry, rubbing, and constriction. Enlarge or remove guards as the tree grows.
- **Support only if needed:** If the tree is unstable, use flexible ties and stakes outside the planting hole. Allow some trunk movement and remove support once the root system holds it securely, usually after a growing season. Avoid routine fertilizer on a healthy establishing tree.

Train carefully and prevent wounds

Avoid topping or heavy pruning. Retain foliage to support root establishment; gradually correct competing leaders and damaged or rubbing branches as needed. **In Iowa, December-February is the preferred oak-pruning window** to reduce oak-wilt risk. Bur oak is not immune to oak wilt. Avoid unnecessary bark injuries in spring and summer. If storm damage requires off-season cutting, follow Iowa State's oak-wilt wound-protection guidance or consult a qualified arborist promptly.

Seek a diagnosis for persistent leaf decline, sudden wilting, or dieback rather than assuming drought or treating blindly. Keep construction, livestock damage, and soil compaction out of the rooting area.

Acorns and wildlife

Bur oak provides long-term habitat and acorn food for birds and mammals. Better moisture supply and rooting space support crown growth and future bearing capacity; poor soil or drought can constrain both. Soil pH or an oak site index cannot be converted into an acorn yield. Do not expect an immediate food plot: bearing age, crop size, and drop date vary with genetics, weather, pollination, and mast cycles. Good crops need not occur every year. Multiple oaks can diversify a habitat planting, but no tree guarantees wildlife visits at a particular time. Acorns are **not ready-to-eat human nuts**; do not serve them raw or treat this wildlife guide as food-processing advice.

Sources and further reading

- The Morton Arboretum: Bur oak species profile
- NC State Extension: Quercus macrocarpa, soils and taproot
- Iowa State Extension: bur oak soils and habitat
- Iowa State: Care of newly planted trees
- Iowa State: When to prune oak trees and oak-wilt precautions

Prepared October 2026 from the linked sources. Use local Extension advice for site-specific disease and establishment decisions.