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Windbreaks and Hedgerows in Vineyards

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Introduction

Windbreaks and hedgerows are two types of conservation buffers that can provide benefits to vineyards and the surrounding landscape. Windbreaks are rows of trees and/or shrubs in linear configurations, often established with the goal of slowing wind. Hedgerows are dense groupings of trees, shrubs, and other plants in a linear design, planted to achieve a natural resource conservation purpose such as providing habitat for wildlife, including pollinators and beneficial natural enemies. Hedgerows and windbreaks are structurally similar and perform many of the same functions. For example, many windbreaks can provide habitat for beneficial fauna, and many hedgerows can slow wind. Both windbreaks and hedgerows can be planted in and around vineyards to achieve production and conservation goals and help vineyards adapt to and mitigate climate change.

A quince and poplar windbreak in Mendoza, Argentina. Poplar trees grow quickly and can provide protection from wind within a few years of planting. Quince trees growing in front of the poplar trees provide a secondary barrier against wind while also providing a harvestable crop. USDA Forest Service photo by Katherine Favor.

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Banner Photo: Hedgerows in California. USDA Forest Service photo by Katherine Favor.

Benefits

Windbreaks and hedgerows can offer many benefits to vineyards and the surrounding environment, including:

- Protecting plants from wind-related damage
- Improving grapevine photosynthesis
- Reducing soil erosion from wind
- Reducing evapotranspiration, resulting in improved water use efficiency
- Improving air quality by intercepting pesticide and herbicide drift, particulate matter, odors, and dust
- Reducing nonpoint source water pollution and groundwater pollution
- Providing habitat and food for wildlife
- Providing habitat and food for beneficial natural enemies for improved integrated pest management
- Increasing carbon sequestration

Some of these benefits are identified in the purpose sections of the U.S. Department of Agriculture, Natural Resources Conservation Service's Conservation Practice Standards for Windbreak/Shelterbelt Establishment and Renovation (380) and Hedgerow Planting (422).

Plant Protection Benefits: Windbreaks and hedgerows can protect grapes and grapevine tissue from wind. Without the protection of trees and shrubs, wind can cause damage to grapevines by whipping branches, buds, flowers, and fruit. This can cause growth deformities, broken branches, and overall reduced yield (Norton 1988). Wind can also negatively impact the photosynthetic capacity of grapevines by causing stomata to close (Freeman et al. 1982). With fewer stomata open, leaves take in less carbon dioxide, which is necessary for photosynthesis. Windbreaks and hedgerows designed to slow the wind can prevent this kind of damage by sheltering grapevine tissue. With protection from wind, vineyards can significantly increase the number of grape bunches per vine, bunch mass, berries per bunch, berry weight, and overall yield per vine (Dry and Botting 1993).

Soil Health Benefits: Wind can cause soil erosion in vineyards, but conservation buffers like windbreaks and hedgerows can reduce wind erosion and keep soil in place. This is particularly important in vineyards with bare soil in the alleys between vines, where up to 98 percent of erosion is caused by wind (Marzen et al. 2019).

Water Use Benefits: High winds can increase transpiration in vines and evaporation from the soil. By slowing down wind, windbreaks and hedgerows can help reduce evapotranspiration in both vines and the soil. This can improve water use efficiency, helping vineyards rely less on irrigation and save money (Norton 1988).

Pest Management Benefits: Windbreaks and hedgerows can provide habitat for a number of "natural enemy" populations—beneficial insects, mites, birds, and bats—leading to improved management of many insect pests, bird pests, gophers, and other rodents (Baumgartner et al. 2019, Favor et al. 2023, St. George and Johnson 2021). Vineyards adjacent to woody vegetation such as windbreaks and hedgerows have documented increases in the following beneficial natural enemies and reductions in the following grape pests and diseases.

EXAMPLES OF BENEFICIAL NATURAL ENEMIES THAT INCREASE NEAR WOODY VEGETATION:	EXAMPLES OF GRAPE PESTS AND DISEASES THAT DECREASE NEAR WOODY VEGETATION:
• Insects in the Coccinellidae, Chalcididae, Encyrtidae, Chrysopidae, Nabidae, Syrphidae, Pteromalidae, and Aphelinidae families • Insects within the genera *Trichogramma* and *Anagrus* • *Orius* spp. (minute pirate bug) • *Geocoris* spp. (big-eyed bug) • Mites in the Phytoseiidae family • Bats • Insect-eating birds • Owls • Hawks • Falcons • Kestrels • Magpies	• Light brown apple moth (*Epiphyas postvittana* (Walker)) • European grapevine moth (*Lobesia botrana*) • Western grape leafhopper (*Erythroneura elegantula* Osborn) • Small green leafhopper (*Empoasca vitis*) • Leafroll ampeloviruses (GLRaV-1 and -3) and vectors (mealybugs (Pseudococcidae) and soft scales (Coccidae) • "Rugose wood"-associated vitiviruses (GVA) and vectors (mealybugs (Pseudococcidae) and soft scales (Coccidae)) • Spotted wing drosophila (*Drosophila suzukii*) • Vine leafroller tortrix (*Sparganothis pilleriana*) • Gophers • Mice

Sources: Baumgartner et al. (2019), Favor et al. (2023), St. George and Johnson (2021).

When natural enemy pest control is not enough, pesticides may need to be applied in vineyards. However, pesticide drift can cause serious environmental and health problems, especially when winds are high. To prevent drift, the U.S. Environmental Protection Agency (EPA) recommends refraining from applying pesticides when windspeeds are greater than 3–10 miles per hour (U.S. EPA 2024). While it is very important to refrain from applying pesticides under windy conditions to protect the health and well-being of crops and people, crops can suffer losses if swift action is not taken to treat a pest or disease. Windbreaks can provide a solution by slowing down wind so that, in some cases, growers may be able to comply with EPA recommendations and safely apply pesticides despite surrounding wind conditions. This can allow vineyard managers to apply pesticides at the proper intervention thresholds, improving overall pest management.

Adapting to and Mitigating Climate Change

Climate change can intensify many of the challenges that grape growers are already experiencing, including water stress and pest pressure. In the coming years, many grape-growing regions are expected to experience higher levels of drought and more erratic precipitation events, adding to the water stress that many vineyards are already experiencing (USGCRP 2023). Rising temperatures from climate change are also projected to increase the risk of insect pest damage in many crops, including grapes. Climate change models project shorter periods of frost and longer periods of heat in many grape-growing regions, which could increase the risk of insect pests surviving over winter and reproducing more often. Changing temperature patterns may also alter the geographic range of many pests, meaning vineyards may have to contend with new pests (Reineke and Thiery 2016, Skendžić et al. 2021). By reducing evapotranspiration and improving integrated pest management, windbreaks and hedgerows may be one way to address climate risks such as these.

Windbreaks and hedgerows can help vineyards mitigate climate change as well, by sequestering carbon in aboveground woody biomass and belowground soil organic matter and roots (Chiartas et al. 2022). Because windbreaks and hedgerows can also reduce soil erosion, stored carbon remains in the soil instead of drifting away. An additional benefit is that trees and shrubs in hedgerows can provide habitat for wildlife that may be in danger due to habitat destruction or whose ranges may be shifting due to climate change.

Planning and Design Considerations

Spacing and Orientation: Proper design is crucial to the functionality of conservation buffers like windbreaks and hedgerows. In vineyards, windbreaks and hedgerows are often planted around the perimeter of vineyards or vineyard blocks; however, they can also be planted at more frequent intervals throughout a vineyard. If slowing wind is a primary goal, windbreak intervals can be determined by the length of the "zone of protection" formed by windbreaks. The length of a given zone of protection for sensitive crops like grapes is typically six to eight times the height of the tallest trees and shrubs in the windbreak (Finch 1988). This "zone of protection" is typically longer for other kinds of crops, but grapes in particular benefit from windbreaks at more frequent intervals. If promoting natural enemy pest control is a primary goal, growers can consider spacing hedgerows at intervals of every 250 to 300 feet, as this is the maximum distance that many natural enemies can travel (Pryor et al. 2024).

Because hedgerows are often planted around the edges of vineyard blocks, their orientation is often predetermined. However, if the vineyard experiences a pattern of strong, troublesome winds coming from a particular direction, growers can consider planting taller windbreaks perpendicular to the prevailing wind direction, to intercept wind head on. Wind roses, which show typical wind speed and direction at specific locations, can be useful in understanding prevailing winds (USDA NRCS 2024).

To support beneficial natural enemies while also effectively slowing wind, a good rule of thumb is to plant two to three rows of trees and shrubs. Planting shrubs and shorter trees closer to the side where the wind is coming from can help direct wind up and over the windbreak or hedgerow, helping to slow it down effectively. Within each row, trees and shrubs should be planted close enough together so that there is 40–60 percent foliage density at maturity (Straight and Brandle 2007).

To accomplish this, growers often plant taller trees at normal recommended spacing intervals and fill in the gaps with smaller trees and shrubs that may be thinned in the future to maintain this density.

The length of the windbreak or hedgerow should extend out at least to the edge of the vineyard, but to prevent excessive wind turbulence where the windbreak ends, many growers opt to extend windbreaks 100 feet past the desired "zone of protection." It is important to have no gaps in vegetation, as wind can funnel through gaps at a high velocity and cause damage to nearby vines.

More information about design considerations for windbreaks is included in Agroforestry Note #25, "Windbreaks: An Agroforestry Practice."

Species Selection: Species selected for windbreaks and hedgerows often include a mix of tall evergreen species, tall- to medium-height deciduous trees, and shorter evergreen and deciduous trees and shrubs. Evergreen species provide year-round wind protection and habitat for fauna because their leaves remain on trees throughout the winter. Shorter trees and shrubs that are mixed with taller species help block wind at lower heights, which promotes more uniform protection from wind. Selecting trees and shrubs that flower at different times of the year can provide sources of pollen and nectar to animals throughout the seasons.

If supporting native populations of beneficial natural enemies and other animals is a goal, growers can prioritize native plant species. Native plants can provide the specific kinds of nectar, pollen, and shelter that many native animals have evolved to utilize. A well-suited habitat for natural enemies and wildlife has vertical structure, a diversity of pollen sources, a mix of plants that produce food throughout the seasons, year-round shelter, and continuous vegetation. Ideally, growers will consider all these factors when designing a windbreak or hedgerow species mix to support wildlife, including beneficial natural enemies.

A poplar, desert willow, and jujube windbreak protects a vineyard in Farmington, NM. USDA Forest Service photo by Kate MacFarland.

To generate a secondary source of income from a windbreak or hedgerow, growers can select species that produce a harvestable crop. For example, peach (*Prunus* spp.), quince (*Cydonia* spp.), elderberry (*Sambucus* spp.), fig (*Ficus* spp.), and other trees that grow well in Mediterranean climates have been utilized in windbreaks and hedgerows around some vineyards. These trees can either be mixed in at random intervals within the windbreak or hedgerow or they can occupy their own rows for ease of harvest.

California is one of the largest producers of grapes in the United States. The table below highlights native trees and shrubs commonly found in windbreaks and hedgerows in California that are suitable to plant around vineyards. Many of these species slow wind and filter particulate matter in addition to supporting wildlife, therefore making them appropriate for use in both windbreaks and hedgerows.

Trees and shrubs native to California suitable for planting around vineyards as windbreaks, hedgerows, or both:

Species	Windbreaks	Hedgerows	Both
Aleppo pine (*Pinus halepensis*)	X		
Bigleaf maple (*Acer macrophyllum*)	X	X	X
California buckeye (*Aesculus californica*)	X	X	X
California buckthorn (*Frangula californica*)	X	X	X
California flannelbush (*Fremontodendron californicum*)	X	X	X
California foothill pine (*Pinus sabiniana*)	X	X	X
California laurel (*Umbellularia californica*)	X	X	X
California wax myrtle (*Morella californica*)	X	X	X
Coulter pine (*Pinus coulteri*)	X		
Coyotebush (*Baccharis pilularis*)	X	X	X
Hollyleaf cherry (*Prunus ilicifolia*)	X	X	X
Incense cedar (*Calocedrus decurrens*)	X		
Pacific madrone (*Arbutus menziesii*)	X	X	X
Wavyleaf silktassel (*Garrya elliptica*)	X	X	X
Saltbush (*Atriplex* spp.)	X	X	X
Silver maple (*Acer saccharinum*)	X		
Sugar sumac (*Rhus ovata*)	X	X	X
Valley oak (*Quercus lobata*)	X	X	X

Data sources: Calflora (2024), National Audubon Society (2024).

The species present in a hedgerow or windbreak can also influence the success or failure of pest management efforts. While some species can improve pest management in vineyards, improper species selection can cause the opposite result, as certain tree and shrub species may serve as alternative hosts or overwintering host sites for harmful grape pests. One such example is the glassy-winged sharpshooter (Homalodisca vitripennis), which transmits Pierce's disease, a fatal grapevine bacterial disease (Rathé et al. 2014, Stancanelli et al. 2015, Wistrom et al. 2010). Numerous trees and shrubs can serve as hosts to this harmful vector including common species such as apple (Malus spp.), eucalyptus (Eucalyptus spp.), pine (Pinus spp.), elderberry (Sambucus spp.), and willow (Salix spp.). A comprehensive list maintained by the California Department of Food and Agriculture can be found in the State's Plant Quarantine Manual (California Department of Food and Agriculture 2020). Plants included on this list should be excluded from a windbreak or hedgerow species mix if a vineyard is in an area where the glassy-winged sharpshooter is prevalent.

The glassy-winged sharpshooter is just one of many pernicious grape pests that can harm vineyards. Determining whether a particular tree or shrub is an alternative host for prevalent grape pests in a given area is always a good practice when choosing species for windbreaks and hedgerows in vineyards.

Establishment

As with any new tree or shrub planting, plants must be protected and cared for during the first several years of establishment to promote a better survival rate. It is common to use tree tubes, gopher baskets, rabbit baskets, fencing, and other exclusion measures to prevent wildlife from damaging young trees.

Weeds and resident vegetation can also put pressure on young plants during establishment. Weeding, mowing, utilizing weed barriers, or applying herbicides can reduce vegetative competition. Applying nutrients through fertilizer or compost additions can also help give trees and shrubs a boost during establishment. Because supporting wildlife, including beneficial natural enemies, is often a goal when establishing windbreaks and hedgerows in vineyards, it is important to ensure that any chemicals applied are not harmful to desired flora and fauna. Selecting organic herbicide and fertilizer options is one course of action that may help reduce potential negative impacts of chemical inputs.

In many grape-growing regions of the world, water can be scarce. In areas with limited natural rainfall, growers can consider developing an irrigation strategy for young trees and shrubs, especially during the first 2 years of establishment. Many growers opt to install drip irrigation lines, as they mirror the linear structure of hedgerows and windbreaks and promote water efficiency. Mulching can also be an effective way to maintain moisture in the soil and prevent water stress.

Management

Continual maintenance is necessary to ensure that windbreak and hedgerow buffers remain functional. To maintain the desired density and width of buffers, trees and shrubs may need to be added or removed. Regular weeding, fertilizer application, and pruning can help reduce competition between plants for water, nutrients, and light. If the selected trees and shrubs will produce a harvestable crop, it is important to plan for the labor, equipment, and other resources associated with cultivation, management, and harvest activities for these species.

Challenges and Considerations

While windbreaks and hedgerows can provide many production benefits to vineyards, it is important to note that farmers have reported reduced yields in grapevines planted within 13 feet of tree plantings (Grimaldi 2018). These reductions in yield are largely caused by competition between trees and grapevines for resources like water, nutrients, and light. To reduce competition for water and nutrients, extra water and fertilizer can be applied to grapevine rows directly next to hedgerows and windbreaks. Alternatively, windbreaks and hedgerows can be planted opposite access roads, which allows for more space between grapevines and trees.

Challenges with wildlife can be a concern as well. While windbreaks and hedgerows can provide habitat for wildlife, including beneficial natural enemies, they can also support undesirable species. For example, many pest birds can be supported by windbreaks and hedgerows. However, because hedgerows often support larger birds of prey, pest birds are often kept in check (Baumgartner et al. 2019). Adding raptor perches and owl boxes further encourages birds of prey to hunt in vineyards. Even so, some crop damage from pest birds may still occur. One way to prepare for this is by utilizing bird netting in vineyards, which is a standard operating procedure in many vineyards. With or without the addition of windbreaks and hedgerows, other wildlife, like deer, squirrels, rabbits, and other animals, may also pose a risk to vineyards. Vertebrate pest management measures like gopher baskets, deer fencing, traps, netting, and other strategies can be helpful to protect grapes from wildlife.

Conclusion

Windbreaks and hedgerows can provide many conservation and production benefits to vineyards. By slowing wind, windbreaks and hedgerows can protect grapevines from tissue damage, improve photosynthesis, reduce soil erosion, and improve water use efficiency. Windbreaks and hedgerows can also intercept pesticide and herbicide drift and can slow down wind enough to allow for more timely applications of pesticides and herbicides. Windbreaks and hedgerows can also provide habitat for wildlife, including beneficial natural enemies, to improve integrated pest management, all while sequestering carbon. As climate change exacerbates many of the issues that vineyards currently contend with, implementing conservation buffers like windbreaks and hedgerows can help make vineyards more resilient. If care is taken in the planning, design, establishment, and management of windbreaks and hedgerows, growers can create an ecologically beneficial farmscape that improves vineyards' productivity and resilience.

Additional Information

Parker, L.E.; Zhang, N.; Abatzoglou, J.T. [et al.]. 2024. A variety-specific analysis of climate change effects on California winegrapes. International Journal of Biometeorology. 68: 1559–1571.

U.S. Department of Agriculture, Natural Resources Conservation Service [USDA NRCS]. 2010. Hedgerow Planting (Ft.) (422) Conservation Practice Standard. NRCS 422-CPS-1. In: National handbook of conservation practices. Washington, DC. https://www.nrcs.usda.gov/resources/guides-and-instructions/hedgerow-planting-ft-422-conservation-practice-standard. [Date accessed: 8 November 2024].

U.S. Department of Agriculture, Natural Resources Conservation Service [USDA NRCS]. 2021. Windbreak/Shelterbelt Establishment and Renovation (Ft.) (380) Conservation Practice Standard. NRCS 380-CPS-3. In: National handbook of conservation practices. Washington, DC. https://www.nrcs.usda.gov/resources/guides-and-instructions/windbreakshelterbelt-establishment-and-renovation-ft-380. [Date accessed: 8 November 2024].

References

Baumgartner, J.A.; Kross, S.; Heath, S.; Connor, S. 2019. Supporting beneficial birds and managing pest birds. [Brochure]. Watsonville, CA: Wild Farm Alliance. 64 p.

Calflora. 2024. NRCS eVegGuide [Database]. Version 5.11.2. https://www.calflora.org/nr.cs index.html. [Date accessed: 12 September 2024].

California Department of Food and Agriculture. 2020. Plant quarantine manual, section 454.1: Pierce's Disease Control Program. Sacramento, CA. 10 p.

Chiartas, J.L.; Jackson, L.E.; Long, R.F. [et al.]. 2022. Hedgerows on crop field edges increase soil carbon to a depth of 1 meter. Sustainability. 14: 12901.

Dry, P.R.; Botting, D.G. 1993. The effect of wind on the performance of Cabernet Franc grapevines. Australian and New Zealand Wine Industry Journal. 8: 347–352.

Earnshaw, S. 2018. Hedgerows and farmscaping for California agriculture: a resource guide for farmers. 2d ed. Davis, CA: Community Alliance with Family Farmers. 76 p.

Favor, K.; Gold. M.; Halsey, S. [et al.]. 2023. Agroforestry for enhanced arthropod pest management in vineyards. Agroforestry Systems. 98: 213–227.

Finch, S. 1988. 12. Field windbreaks: design criteria. Agriculture, Ecosystems & Environment. 22–23: 215–228.

Freeman, B.M.; Kliewer, W.M.; Stern, P. 1982. Influence of windbreaks and climatic region on diurnal fluctuation of leaf water potential, stomatal conductance.... American Journal of Enology and Viticulture. 33: 233–236.

Grimaldi, J. 2018. Impacts of agroforestry on microclimate for grape and wine production: assessment in Southern France. Toulouse, France: University of Toulouse. 400 p. Dissertation.

Marzen, M.; Iserloh, T.; Fister, W. [et al.]. 2019. On-site water and wind erosion experiments reveal relative impact on total soil erosion. Geosciences. 9: 478.

National Audubon Society. 2024. Native Plants Database. [Database]. https://www.audubon.org/native-plants. [Date accessed: 12 September 2024].

Norton, R.L. 1988. 11. Windbreaks: benefits to orchard and vineyard crops. Agriculture, Ecosystems & Environment. 22–23: 205–213.

Pryor, S.; Baumgartner, J.; Filannino, N. 2024. Managing pests with predator and parasitoid habitat. [Brochure]. Watsonville, CA: Wild Farm Alliance. 30 p.

Rathé, A.A.; Pilkington, L.J.; Hoddle, M.S. [et al.]. 2014. Feeding and development of the glassy-winged sharpshooter, Homalodisca vitripennis, on Australian native plant species and implications for Australian biosecurity. PLoS ONE. 9: e90410.

Reineke, A.; Thiery, D. 2016. Grapevine insect pests and their natural enemies in the age of global warming. Journal of Pest Science. 89: 2.

Skendžić, S.; Zovko, M.; Živković, I.P. [et al.]. 2021. The impact of climate change on agricultural insect pests. Insects. 12: 440.

St. George, D.A.; Johnson, M.D. 2021. Effects of habitat on prey delivery rate and prey species composition of breeding barn owls in winegrape vineyards. Agriculture, Ecosystems & Environment. 312: 107322.

Stancanelli, G.; Almeida, R.; Bosco, D. [et al.]. 2015. Assessing the risk posed to plant health by Xylella fastidiosa in the European Union. [Watch Letter]. CIHEAM: The International Centre for Advanced Mediterranean Agronomic Studies. 33: 1–8.

Straight, R.; Brandle, J. 2007. Windbreak density: rules of thumb for design. Agroforestry Note 36. Lincoln, NE: U.S. Department of Agriculture, Forest Service, National Agroforestry Center. 4 p. https://www.fs.usda.gov/nac/assets/documents/agroforestrynotes/an36w03.pdf. [Date accessed: 10 January 2024].

U.S. Environmental Protection Agency [U.S. EPA]. 2024. PRN 2001-X draft: spray and dust drift label statements for pesticide products. https://www.epa.gov/pesticide-registration/prn-2001-x-draft-spray-and-dust-drift-label-statements-pesticide-products. [Date accessed: 25 October 2024].

U.S. Global Change Research Program [USGCRP]. 2023. Fifth National Climate Assessment. Crimmins, A.R.; Avery, C.W.; Easterling, D.R. [et al.], eds. Washington, DC. https://doi.org/10.7930/NCA5.2023.

U.S. Department of Agriculture, Natural Resources Conservation Service [USDA NRCS]. 2024. Wind rose resources. [Database]. https://www.nrcs.usda.gov/wps/portal/wcc/home/climateSupport/windRoseResources/. [Date accessed: 28 October 2024].

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CAUTION: Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or other wildlife—if they are not handled or applied properly. Use all pesticides selectively and carefully. Follow recommended practices for the disposal of surplus pesticides and pesticide containers.

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