



Sustainable Practices



CQC Members Adopt Sustainable Practice Guidelines



In November of 2008, CQC member companies adopted a set of guidelines for sustainable business practices. Our model was based partially on the guidelines for wineries endorsed by the California Sustainable Winegrowing Alliance. We also borrowed on some cork related guidelines found in the European Cork Confederation's Systecode and from our own CQC Quality Assurance Guidelines.

Natural cork is already one of the world's most environmentally beneficial industrial products. The modern cork industry is recognized as a leading example of the employment of sustainable industrial practices. At the CQC our goals are to build on this performance and to address and improve the sustainable practices of our member companies here in the U.S. market.

The foremost category of the CQC Sustainability Guidelines covers **Product Quality**. This is the most important criteria for nearly any commercial sustainability program. Quality guidelines include numerous targets based on established CQC quality requirements, including screening results for TCA, moisture, dimensions and residual oxidants.

Current CQC guidelines for chemical screening of TCA are based on a "flag level" of 1.5ppt – the most demanding acceptance level in the world's cork industry. CQC members have led the industry in the reduction of TCA and have demonstrated an 80% reduction in taint levels since the inception of their screening protocol.

Guidelines for **Energy Efficiency, Material Handling and Waste Reduction** are similar to those endorsed by the California Sustainable Winegrowing Alliance.

Guidelines for **Environmentally Preferred Purchasing** specify that CQC members source their raw material from suppliers certified by the European Cork Confederation's Systecode. This certification ensures that the CQC cork has been prepared by suppliers who employ "good manufacturing methods for cork stoppers". Systecode requires traceability and outlines quality measures from receipt of raw cork wood through the shipment of finished products.

Guidelines for **Transportation** ensure that the most energy efficient delivery methods are used to import corks and to ship finished corks to winery clients.

CQC Sustainability Criteria	
1	Product Quality
2	Energy Efficiency
3	Material Handling
4	Solid Waste Reduction
5	EPP (Purchasing)
6	Transportation

The Cork Forest

Sustainability is often described as a combination of attributes including environmental stewardship, community support and economic viability. The cork industry is often cited as a model for sustainable industry, as its scope includes the protection of valuable environments and, by its very nature, is dedicated to renewable and recyclable practices.

Environmental Stewardship

According to the World Wildlife Fund, "Cork oak landscapes are one of the best examples of balanced conservation and development anywhere in the world. They also play a key role in ecological processes such as water retention, soil conservation, and carbon storage."

It is easy to see why the WWF is enthused with the cork forest and its use. The cork forest is a vital ecosystem that plays a crucial role in halting desertification throughout most of the region. It is home to numerous endangered species, and provides a richly diverse habitat to flora and fauna. Most of all, the forest is utilized by a cork industry that has created legal protection for its preservation.

Cork trees are harvested every nine to twelve years. The trees are not cut down and can be expected to live for 200 years. This makes the industry a near-perfect example of renewable production.

Cork Oaks are normally found in scattered stands of indigenous growth. They require no soil preparation, irrigation, pesticides or herbicides. Harvesting is almost entirely manual with the only use of power equipment by the occasional tractor to carry harvested wood to a central location.

The Cork Forest and Local Economy

A simple summary of the manufacturing process shows a pattern of washing, drying and cutting. There is no call for widespread use of chemicals – and when used they are generally tame and safe substances like hydrogen peroxide – which is used in the final washing.

Community Support

The cork industry employs an estimated 100,000 people throughout the Mediterranean region. The majority are employed in harvesting and production, but the cork sector also employs thousands involved in associated industries like nurseries, transportation and research.

The UN has reported that forests in North Africa play an important role in both environmental protection and poverty alleviation. They strongly endorse the processing of non-timber forest products such as cork as a crucial step to support the local environment, employment and growth.

The cork industry is widely credited with protecting the cork forest, which is an important source of grazing habitat, hunting and tourism.



Natural cork is harvested every nine to twelve years, depending on the condition of the tree.

Economic Viability

The cork industry enjoys solid economic performance as the wine industry – particularly in the premium sectors – shows strong growth.

Other profitable uses for cork have emerged with new products in the industrial sectors, particularly home furnishings and fashion. These sectors have embraced cork for both its natural beauty, performance and sustainable qualities.

It is the wine business, however, that drives the cork industry and has been the focus of most attention. Over the past decade the cork industry has invested tens of millions of dollars in research and new industrial applications so that natural cork will remain the leading wine bottle closure of the future.

Newly developed systems of washing, material handling and quality control have already demonstrated great improvements in quality and consistency.

Much of the past emphasis has been on reducing the incidence of cork taint. Though the chance of occurrence has not been eliminated – most winery customers of CQC members acknowledge the striking improvements and have estimated their observance of cork taint at less than 1%.

Future research is anticipated into the role natural cork plays in the flavor development in wines. While most sensory comparisons between natural cork and other closures focus on oxygen permeability, many feel that the well-recognized association of natural cork with “developed wine flavors” is caused by more than natural cork’s superior performance as a barrier. The beneficial roles played by other oak flavor components found in natural cork have not been fully studied.



World Wildlife Fund Cork Oak Landscapes

Choose cork

Cork harvesting is an environmentally friendly process during which not a single tree is cut down.

In addition, because of their economic value, local communities take care of the cork oak forests. This helps reduce the risk of fires and desertification.

Everybody can help save the precious cork oak landscapes of the Mediterranean and protect them against desertification, fires and other threats which could lead to their disappearance.

It is crucial that demand for cork bottle-stoppers is maintained. Above all, you can choose cork products.

The wine industry can promote the use of cork bottle-stoppers in recognition of the environmental and socio-economic value of cork oak landscapes.

Cork producers, meanwhile, must improve the quality of cork stoppers, especially by addressing wine taint and leakage, and communicating progress to the wine industry and consumers.

Wine drinkers have to demand that their favorite wine stores stock bottles with cork stoppers.

Both the cork and the wine industry can help by supporting the FSC certification effort.

WWF supports cork because it is natural and recyclable and it supports jobs and biodiversity.

By choosing cork you:

- **support** 100,000 livelihoods in the Mediterranean region.
- **guard** against desertification, fires, and a number of serious environmental threats facing Europe.

Ecologically Beneficial

Cork oak forests support one of the highest levels of biodiversity among forest habitats, as well as the highest diversity of plants found anywhere in the world.

In cork oak landscapes, plant diversity can reach 135 species every square meter. Many have aromatic, culinary, or medicinal value.

Cork oak landscapes contain more than 30 different brackens, some of them very rare, and cork oak micro flora includes many species of mushrooms.

The fertile undergrowth is thick with heathers, leguminous plants, rock roses, and herbs.

Wintering birds

Cork oak forests also host a rich diversity of fauna, including spiders, spadefoot toads, geckos, skinks, vipers, mongoose, wild cats, roe deer, boars, Barbary deer, and genets.

Countless millions of wintering birds from northern Europe, including virtually the entire common-crane population, shelter in cork oak landscapes in the Mediterranean.

Storks, kites, vultures, buzzards, and booted and short-toed eagles gather at bottlenecks like the straits of Gibraltar and Messina and the Bosphorus, where they can climb in thermals and cross safely.

Nearby cork oak forests are a vital haven, like the Los Alcornocales Nature Reserve in Andalusia.

Cork oak landscapes also provide crucial ecological services.

Vital services

The trees help conserve soil by protecting against wind erosion and increasing the rate at which rainwater is absorbed.

The cork forest also protects areas below the upland areas by intercepting rainfall and reducing soil erosion that might damage irrigation and hydroelectric installations.

Cork oak landscapes store carbon, reducing greenhouse gases in the atmosphere, especially in the early years of their life when they grow quickly. In Spain, the Andalusian forests store more than 150 million tons of carbon dioxide, of which cork oak trees store nearly 11 per cent.

Cork oak trees store carbon in order to regenerate their bark, and a harvested cork oak tree absorbs up to five times more than one that isn't. (WWF)



Common Crane
Grus grus — depend of the cork forest during winter migrations.



The Iberian Lynx,
Lynx pardinus — estimated 110 individuals in Southern Europe.

Renewable & Recyclable

Renewable

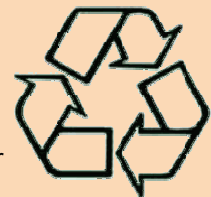
Depending on the growing region, cork trees are harvested every nine to twelve years. The trees are not cut down and can be expected to live for 200 years. This makes the industry a near-perfect example of renewable production.

Most modern wine cork factories utilize cork dust from the processing plant to co-generate electricity. Larger scraps are reserved for use in agglomerated cork production. Virtually every piece of the wood harvested is utilized. Solid waste is minimal.

The process is repeated every decade for the life of the tree. Harvested trees normally live past 200 years, and are generally considered to be more healthy than those trees that have never been harvested.

Recyclable

Natural wine corks consist of wood and a thin coating of silicon/paraffin (for better extraction from the bottle).



Used corks have long been collected for craft purposes to make wreaths, coasters, and in one famous case - a full size sailing ship that traveled Portugal's Duoro River. They are also popular with suppliers of specialty ground covers (playgrounds) and are used in mulch and soil conditioners.

Until recently, there was little opportunity to return the wine corks to a manufacturer for recycling into second generation cork products.

This has now changed with the advent of several recycling program in North America. One of the fastest growing programs is "ReCork America" which has opened numerous receiving facilities in the U.S. They arrange for delivery used corks to industrial cork facilities, where the wine corks are ground into small pieces for reassembly into cork sheets suitable for flooring, gaskets or other uses.



**World Wildlife Fund
Cork Oak Landscapes**

Habitat mosaics

The cork oak landscapes are mosaics of forest habitats, comprising cork, holm and deciduous oak species, stone and maritime pines, wild olive trees, maquis, and pasture.

The habitats have been ranked among the most valuable in Europe and are listed in the European Council Habitats Directive.

In total the western Mediterranean produces about 300,000 tons of cork each year.

Portugal is by far the most important cork producer. About 60 per cent of cork production now comes from there.

Cork oak landscapes are one of the best examples of balanced conservation and development anywhere in the world. They also play a key role in ecological processes such as water retention, soil conservation, and carbon storage.

Their conservation is crucial.

Carbon Footprint for Different Wine Closures

Many wineries have recently launched campaigns to reduce their carbon footprint. It is an ambitious task that expands into all areas of operation including production, agriculture and logistics.

The choice of bottle closures can be an important factor in achieving a carbon neutral position. All published estimates show that the production of Natural Cork has a lower carbon footprint than any alternative. More importantly, if you calculate the carbon fixing effect of the cork forest, the net carbon footprint for natural cork shows that each cork acts as a carbon sink. In the carbon footprint calculator provided here - each natural cork contributes an offset of 118g of CO₂.



Estimates for 2006, show the Portuguese cork forest acted as a carbon sink for 4.8 million tons of CO₂. Portugal accounts for slightly less than one third of the world's cork forests.

Carbon Dioxide per Closure (grams)

CO ₂ Footprint	Natural Cork	Aluminum Screwcap	Synthetic Stopper
Manufacture	1.5	37.2	14.8
Forest Offset	-118.5	0	0

Net Carbon Dioxide Contribution (tons)

Case Sales	Natural Cork	Aluminum Screwcap	Synthetic Stopper
5,000	-7.7	2.5	1.0
10,000	-15.5	4.9	2.0
25,000	-38.7	12.3	4.9
50,000	-77.4	24.6	9.8
100,000	-154.8	49.2	19.6
200,000	-309.5	98.4	39.2
1,000,000	-1547.6	492.1	195.8

If you have started on a program of reducing your carbon footprint, you are surely aware that there are many accounting theories in play. The CQC model cites several examples and has selected those figures with the deepest documentation. Assumptions and references used for these calculations can be found at www.corkqc.com/sustain/carbon-notes.htm

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