

Viewpoints: Can trees and levees both live in harmony? They can, if...

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The U.S. Army Corps of Engineers' decision to enforce a policy of removing large vegetation from many miles of Central Valley levees has caused quite a stir.

Both sides assert noble and worthy causes – environmental and recreation interests want to protect trees and bushes on levees, and public safety demands vegetation removal. Both sides are right.

Sadly, California has set aside little room for both the environment and flood safety, so these important causes must fight over thin strips of levee that currently provide poor habitat and poor flood protection.

Authorities can more effectively inspect levees when they are free of trees. Most levees fail before over-topping, and usually give warning (through slumping, animal burrows, or seeping water) before collapsing. That allows some time for repair and evacuation. Emergency repairs also proceed faster without vegetation. Limiting vegetation also might introduce fewer potential problems from decaying roots or uprooted falling trees.

Worldwide, in countries such as the Netherlands and China, serious levee systems are cleared of trees.

Nevertheless, the dilemma is real.

Most levees prevent flooding for only a few days or weeks in the few years when major floods occur. More than 99 percent of the time, levees are used primarily for recreation and habitat. They are places where people can go up and see their rivers.

Levees with trees are clearly more attractive, except when they need to be inspected. If the levee protects little of value, then perhaps a case can be made that reliability can be sacrificed for protecting a levee's habitat and aesthetics. Alas, urban levees, protecting homes and businesses from floods, are the ones that are the most valued for recreation and cooling shade.

Levees can be built for both flood and non-flood purposes by widening, sheet-piling levee cores, improving drains, and other means, to allow vegetation without hindering flood protection. However, building multi-functional levees has financial costs.

In urban areas, where multiple purposes are most valuable, land for widening levees is awkward and expensive to acquire.

The argument that trees on levees are vital for endangered species illustrates what little regard we show for both protecting endangered species (which deserve real habitat) and

simultaneous protecting against floods. California has clearly provided inadequate habitat for native species and inadequate protection from floods. Pitting these services against each other is counterproductive.

For dense urban areas, Japanese-style "superlevees" can support both flood protection and recreational objectives (including trees). In Japan, "superlevees" are so wide (600-900 feet) that their failure is almost impossible, even in earthquakes. Even overtopping is unlikely to evolve into a major levee breach. These wide levees also can be built upon, giving both flood protection and improved views from the buildings on the levees, enhancing property values. The additional levee width means trees should no longer conflict with flood protection. This approach is similar to Sacramento raising its downtown in the 1800s.

Substantially widening urban levees should also make it easier to set them back to restore at least some riparian corridor for aquatic habitat and increase the capacity for moving floodwaters through the system. Today's rip-rapped levees, even with trees, are poor habitat for most native species, and do little to provide riparian corridors for endangered fish and birds.

With wider levees, urban redevelopment can lead to stronger levees, lower flood risk and better riparian habitat. Such urban re-development could also finance levees. In rural areas, the trade-off will be more acute, but can sometimes be reduced where smaller levees can be moved back from the river to create flood capacity and riparian habitat. Both approaches will require changes in flood management and land use, and will face major political and economic challenges. But they will free flood protection and environmental interests from a destructive argument that tends to result in paralysis.

In the short term, given the expense of removing vegetation from levees, we should set priorities on where vegetation removal is most important.

This will allow limited funds to be better spent on flood protection, which sometimes will mean vegetation removal and other times will mean improving the basic structure of the levee. Another short-term action, especially important in these severe times, is securing long-term funding for flood protection and riparian habitat.

Public safety and the environment should not need to fight each other over thin strips of land. Today's levees are typically too close to the river for flood protection, maintenance and environmental protection.

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