

## **Public Access to Urban Creeks and Wildlife Compatibility**

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Due to an increasing population in the South Bay, a scarcity of open space lands in the valley and the desirability of streamside lands, demand for additional public access to, and development of, lands adjacent to our local urban creeks is growing. Multi-use trails, picnic areas, ball fields, community farms, BMX dirt jumps and dog parks are all being discussed as possible developments along our local creeks. At the same time, valley creeks and their associated riparian and upland habitats are a shrinking but vital wildlife resource. Public policy has focused on maximizing access to creeks with a view to not only increasing recreational opportunities, but also to increasing appreciation and support for wildlife. However, many studies over the past several years show that public access to such areas has a significantly negative impact on wildlife. We need to temper the goals of increased public access with the goals of protection and enhancement of wildlife habitat along our creeks. Achieving this will require proactive, coordinated planning and flexible, adaptive implementation.

Our local urban creeks and adjoining lands are continuous, connected living systems which transcend the boundaries of the cities through which they flow. Aquatic, riparian and upland habitats are all connected through a dynamic movement of water, energy and nutrients. For instance, trees near creeks help maintain a healthy habitat for fish and other aquatic organisms by moderating water temperatures and contributing woody debris and other organic matter. In turn, creek bottoms provide habitat for the early stages of many insects which then serve as food for terrestrial animals such as birds and bats. Many animals need to move considerable distances upstream, downstream or upland from the creek during their life. Degradations to one part of the creek ecosystem - aquatic, riparian or upland - affect the health of the system as a whole.

Numerous studies indicate that riparian habitats are vital to the vast majority of wildlife species, many of which are in decline (California Department of Fish and Game, 2007). The Department lists over 800 wildlife species - 455 vertebrate and 369 invertebrate - at risk in California. Most of these species require access to creeks or riparian habitats for all or part of their life cycle. A multiplicity of local land use decisions from the past has already impaired the integrity of these biologically important areas in our valley.

Many people do not understand the damage already done to local creeks and adjacent lands because degraded habitats can still be superficially attractive. Attractiveness, however, is not a reliable indicator of the land's ability to sustain a rich diversity of native plants and wildlife. The cumulative effects of past land use decisions, in concert

with altered water flow regimes and pollution, have caused some native species to become more common, some to become more scarce and others to disappear altogether while invasive species have found a comfortable home in valley creek areas. The result is an overall decrease in biodiversity and ecosystem function. Still, although reduced from historical times, local creek areas boast a relatively high diversity of plants and animals.

A review of the many studies done of various streamside buffer, or protective, widths suggest that a 100-foot buffer provides substantial protection for water and aquatic habitat quality, but a 300-foot buffer, at least along some areas of a stream, is needed to protect diverse terrestrial wildlife communities (Wenger, 1999). When habitat has been degraded by closely-built residences, businesses or roads on one side of a creek, it is especially important to maintain a healthy and sufficiently wide habitat on the other side. The width and pattern of appropriate protected buffer areas varies from stream to stream.

It is not just the installation of physical structures such as buildings, roads and trails which degrade the quality of streamside habitat. Many people are not aware that the human disturbance associated with public access to creek areas also affects habitat quality. In particular, impacts from the use of recreational trails are greatly underestimated. A survey of backcountry hikers in Utah revealed that 50% assumed they had no negative impacts on the wildlife in the surrounding area (Taylor & Knight, 2003). A large body of research refutes such assumptions for sites both distant from and adjacent to urban areas.

For instance, one study showed that even when bird communities in riparian areas have been heavily impacted by urbanization in surrounding lands, the presence of hikers, joggers and bicyclers along a recreational trail have a significant further impact, especially on species that nest close to the ground or forage low for insects or seeds (Miller *et al.*, 2003). In many cases, disturbance from human activity is the most important factor affecting the number of bird species, surpassing even the effects from habitat loss due to development (Schlesinger *et al.*, 2008).

In a study of six sites, three with a recreational trail running adjacent to a riparian corridor and three with no trail, the number of raptor species was consistently greater in the sites with no trail (Fletcher *et al.*, 1999). In grasslands, nests were less likely to occur near trails than away from trails. In grasslands and forests, nest survival increased with increasing distance from a trail. The zone of influence was approximately 75 meters, or 246 feet, from a trail for most species (Miller *et al.*, 1998). Trails alter predation patterns differently for different groups of animals; birds attack more nests near trails than away from trails, whereas mammals appear to avoid nests near trails to some extent (Miller & Hobbs, 2000).

Hiking and bicycling trails were shown in one study to be correlated with a five-fold decline in the density of native carnivores and a substantial increase in nonnative carnivore species (Reed & Merenlender, 2008). The authors suggested this might put an unsustainable predation pressure on native birds and small mammals, thereby jeopardizing their survival. The authors went on to say that in larger areas, the

configuration of the trails may be the most important factor, but in moderately sized areas near urban development, the key variable seems to be whether or not the site is open to public access. A related study suggested that bobcats, in particular, were displaced by the disturbance caused by bikers and hikers (George & Crooks, 2006). It may be interesting to note that the studies reviewed did not indicate bicycle traffic on trails to be more disruptive to wildlife than pedestrians. In fact, some of the authors voiced their sneaking suspicion that those of us who stop and gawk at the wildlife have a greater impact than those who whiz by on bicycles.

The above studies are not local, but were cited because of their applicability and relevance to our local situation – proposed recreational trails and other public access near creeks adjacent to urbanized areas. These studies are part of a much larger body of scientific evidence documenting the effects which trails have on surrounding habitat. In an interesting counterpoint, a recent and local study found bayside trails had no significant effects on shorebird numbers, species richness or percent of birds foraging (Trulio & Sokale, 2008). There are a great many differences between bayside and streamside habitats which prevent applying the findings of this study to riparian areas. For instance, shorebirds have the open bay on one side, are used to foraging in sand flat areas which have no vegetative cover and do not nest there. Still, the surprising results offer further illustration of how very much we do not know, and should not assume, about human and wildlife interactions.

Because of the multiple stressors our native plants and animals have already suffered, any further degradation to local creek systems can have a disproportionately large impact, even if on a small parcel of land. Thoughtful environmental planning needs to be done for each creek system as a whole rather than on a project by project basis. It may be possible to maintain reasonable habitat function by providing public access at limited points along creeks rather than continuous access over long reaches, but this will require cooperative planning among the different jurisdictions. Since we really do not know the full impacts of proposed developments, we should think very carefully before doing something which cannot be undone or altered if the impacts are more adverse than expected. Public access is a valid goal, but should not overshadow habitat goals. Over eight hundred species at risk in California indicate we need to start thinking and doing things differently.

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