

## A Survey of the Creeks of San Anselmo

conducted by Charles Kennard and John Walters in 1996

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The condition of the creeks of San Anselmo is typical of creeks throughout the floodplain of the Corte Madera Creek watershed. Deeply down cut (to as much as 15 feet below the floodplain), with steep banks, their natural meandering is largely halted by reinforced banks, and the riparian zone is limited by private gardens that are typically fenced at the top edge of the slope.

Within the incorporated area of the Town of San Anselmo, the mainstem, San Anselmo Creek, is approximately two miles long; the tributary Sleepy Hollow Creek, reaches one-and-three-quarter miles to the town limit; Sorich Creek, running under the Red Hill Shopping Center, is three-quarters of a mile long. About 85% of the creek is privately owned.

Nineteenth-century cattle grazing, logging and farming practices in the valley stripped protective vegetation from the ground, leading to the fast runoff of rainfall and the erosion of creek banks and bed.

Today, the large cumulative area of impermeable roads, parking lots and roofs has the same effect to a greater degree, but some native riparian trees have been able to reestablish themselves along a permanently altered creek corridor, constricted by backyard fences.

Gardening activities have their impacts on the creek side of the fence too: ornamental shrubs and groundcovers often escape onto the creek bank; fertilizers and pesticides move towards the creek; garden debris is frequently dumped over the fence; and some homeowners withdraw water from the creek, at the expense of aquatic life. Where vegetation is unable to stabilize the bank, many homeowners, in an effort to protect their property from erosion, have armored the creek bank with wood, concrete or rock structures. In an effort to prevent flooding caused by logjams, all fallen trees and most brush is removed from the creek bed, to the detriment of fish habitat.



*High water in Creek Park, 1997*

### Survey Results

The three creeks were walked in the summer of 1996, and a total tree count was made, including those that provide any coverage of the sloping creek bank. Observations were also made on shrubs, ground covers, debris, pools, drains, water diversions, bank armoring, erosion problems and wildlife. A photographic record was also made.

**Native trees** made up 82% of the total tree count of 1563, and consisted of nine species: California bay (36%); white alder (18%); native willows (14%); valley oak (9%); box-elder (7%); buckeye (7%); coast live oak (4%); Oregon ash (3%); and big-leaf maple (2%). Alders were in the majority (36%) on the mainstem creek, while the only ones on Sleepy Hollow Creek had been recently planted for bank protection. The creek corridor is the principal refuge on the valley floor for native trees; in aerial views of the valley, the course of creeks can be followed by observing where the tall-growing valley oaks and bays are found. (A scattering of large valley oaks not associated with the



*California bays and big-leaf maples overshadow San Anselmo Creek on the Drake High School campus*

creek can be seen between the Robson-Harrington Park and the Drake High School campus.)

**Native shrubs and vines** were extremely scarce, probably because they are unable to compete with non-native ground covers, especially on unstable banks. Acacias and eucalyptuses produce compounds that discourage the growth of other species, so in some areas this may be a factor. Forty-four individuals were counted, of nine species; in order of frequency these were: blue elderberry; snowberry; poison oak; California pipevine; hazel; toyon; wild cucumber; twinberry; and honeysuckle. (Since the survey was undertaken, Friends' restoration project on the Drake High School campus has multiplied the native shrub and vine count several times.)

**Invasive non-native plants** were rife along the creeks. They grow fast and can retain the soil, but prevent native plants from getting a toehold. Principal among them were periwinkle (*Vinca*), English ivy, and Himalayaberry (blackberry). Other problematic ones were giant reed (*Arundo*), bamboo, French broom, privet, plum, and Cape ivy. All the vines can readily spread through pieces of plant being swept downstream and washing up on soft soil.

**Armored banks** (including culverts), usually built piecemeal, covered about 24% of the length of the banks. (In 1964 the Army Corps of Engineers proposed a plan to completely channelize San Anselmo Creek nearly to the Fairfax border, and the lower mile of Sleepy Hollow Creek.) Armoring typically excluded all vegetation, and increased the erosion of neighboring property. Alders' roots were observed to be very effective at protecting the bank at the low water line. In the downtown section of San Anselmo between Bridge Street and Sir Francis Drake Boulevard, 60% of the length of the creek was covered by bridges and buildings.

**Drains** contributing to the creeks are former smaller creeks now underground, storm drains from roads, or come from yards. Seventeen drains were 24" and larger in diameter; 31 drains were smaller than 24" in diameter.

**Water diversions** were noted in 10 locations, although several were apparently disused.

**Erosion** of a serious scale was observed in 21 locations, and in 10 locations retaining walls were failing.

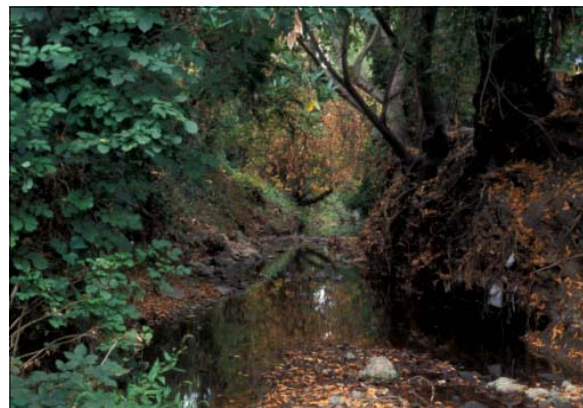
**Debris** had been dumped on the creek bank or bed in 14 locations. These included garden trimmings and construction debris.

**Other problems** such as sewer leaks and a water main leak were reported, and were fixed by the appropriate agency. Litter in the creek was frequent at Bridge Street (near the bus stop) and at the Drake High campus. Old water heaters were often found embedded in a creek bank, discarded decades earlier; if one was at the water line, it tended to form a pool.

**Wildlife** observations were incidental to other observations. Aquatic species noted were: trout; roach; three-spine stickleback; and crayfish. Deer were frequently encountered, often with fawns.



*Armored bank on San Anselmo Creek near Madrone Avenue*



*California bay roots anchored in the bank of Sleepy Hollow Creek near Morningside Drive*

Squirrels were commonly seen.

**Bird species noted were:**

acorn woodpecker  
Anna's hummingbird  
black phoebe  
black-crowned night heron  
brown towhee  
bushtit  
chestnut-backed chickadee  
common merganser  
crow  
green heron  
house finch  
house sparrow

kingfisher  
mallard

mourning dove  
Nuttall's woodpecker  
Pacific slope flycatcher  
raven  
red-shouldered hawk  
robin  
rufous-sided towhee  
scrub jay  
snowy egret  
swallow  
titmouse  
vireo