



UC Santa Cruz Storm Water

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Unofficial Pathways

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Photo: Becky Stamski / MBNMS

Environmental Recognition...

UCSC was one of 362 landscapes (and 1 of 16 colleges and universities) nation wide honored with the once-in-a-century *Medallion Award* by ASLA. The ASLA *Medallion Award* recognizes outstanding landscapes that improve the quality of life for a community.

What are Unofficial Pathways?

Unofficial or ad hoc paths are those that are created when people walk around constructed paths creating new pathways. Examples of such pathways can be seen north of the East Field (see photo at right), above the Oaks Trail (see photo lower right), Kerr Hall and many other areas of campus.



What are the effects of unofficial pathways?

The creation of unofficial pathways can destroy both natural groundcover and the underlying soil. If ground cover is reduced due to trampling, the natural services provided by vegetation are impaired. These natural services include a complex soil structure and porosity created, in part, by the presence of plants and their roots; a filtering of runoff as it flows through plant matter; as well as a softening of erosive impacts of rain droplets which can occur when there is direct impact onto exposed soil. Exposed soils provide a channel for water to flow quickly off the slope, rather than slowly percolating into the soil. As the runoff increases in velocity, erosion of soil and higher sediment loads in runoff may result. Soil erosion can have significant negative effects. Most campus storm water either percolates into the soil or drains to sinkholes where it recharges local groundwater. Sediment-laden runoff from increased erosion can impair sinkhole function. Physical impacts are not the only effect of erosion; the creation of unofficial pathways also decreases the aesthetic appeal of campus lands.

Campus Viewpoints of Unofficial Pathways

Student Community

A random survey of UCSC students conducted by the Environmental Health & Safety Office revealed information pertinent to unofficial pathways on campus.

Out of 51 people surveyed: 71% said they had seen stormwater running into natural drainage systems and above ground in man made drainage systems. When asked about types of erosion seen on campus, 75% said they had seen exposed topsoil, 59% had seen exposed tree/plant roots, and 53% had seen gulleys created in topsoil.

When asked if they have been prevented from using a pathway on campus, 47% said yes, they had been prevented from using a pathway by a fence. Another 39% said they had never been prevented from using a pathway.

When asked why they use unofficial paths 75% said that it saves time while 55% say that it provides ease of movement.



How Can I Get Involved?

Regular volunteer work days and internship opportunities in site restoration and guardianship are offered by 2 great campus groups...

-UCSC Site Stewardship sponsors restoration and guardianship for sensitive natural areas within the UCSC campus.
Contact: grounds_interns@ucsc.edu

-UCSC Natural Reserves sponsors restoration within the Campus Natural Reserves. To find out more:
<http://ucreserve.ucsc.edu/UCSCCNR/stewday.html>



This brochure created by Spencer Flick: Storm Water Student Intern

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Following up, when asked how much time was saved each time they used a path, 45% said that they saved only up to one minute.

When asked about how much the community values the esthetic appeal of campus, 90% said that they strongly value the esthetic appeal of campus.

UC Grounds and UC Campus Reserves

Important players in the design and maintenance of trails on campus are Dean Raven of UCSC Grounds Services and Sean McStay of the UCSC Campus Natural Reserves.

According to Dean Raven, "Tough to convince pedestrians to not short cut, whether ornamentally landscaped or not. Our best experience has been with signed and fenced restoration projects. Some professors have also taken up the chant."

Sean McStay recommends officiating heavily used trails. "A path would save money in the long run because the campus would not have to spend excess money to mitigate the negative effects of erosion. During the planning period is when pathway design needs to be created not after building occurs. Look at where students are going to walk in terms of easement around campus and design a trail to accommodate them."

Solutions to the Problem

Some solutions to the problem of erosion caused by storm water on unofficial pathways have been identified by: UCSC Grounds, UCSC Natural Reserves, and the 2005 Long Range Development Plan.

UCSC Grounds: Utilizes temporary fences, permanent fences, signs, obstructive plantings and obstructive tree debris as a means of preventing pedestrian traffic. Mulch and rice straw, rock, jute netting, fiber rolls, erosion control fabric, silt fencing, redwood logs, seeding and planting are used as erosion control measures.

UCSC Natural Reserves: Trail closure by metal chain link fencing or by hogwire and t-bars are the most effective at blocking access to a heavily used trail, but it is the most expensive. Metal fencing also draws attention to the area. And, if not done correctly people will walk around the fence and make an alternate pathway. Natural barriers are better than fencing because they can be disguised amongst the landscape. Branches and rocks are the best natural blockades. They get knocked down if placed in a heavily used area, but they are good for off shoots of a main trail. Water bars, slope regrading, mulching, rerouting, planting of native species, and rolling undulations in the ground surface are proven ways of preventing direct runoff.

LRDP: A mitigation measure in the LRDP Final EIR requires the Campus to install additional signs and expand the public education program to inform and educate the campus population about the importance of staying on paved roads and approved paths. Another mitigation measure requires that design and planning for new pathways and bikeways shall include fencing, signage, and/or other design features to control pedestrian/bicycle circulation and minimize the potential for shortcuts.

