

MORPHOLOGY OF SMALL, DISCONTINUOUS MONTANE MEADOW STREAMS
IN THE SIERRA NEVADA

A thesis submitted to the faculty of
San Francisco State University
In partial fulfillment of
The requirements for
The degree

Master of Arts
in
Geography: Resource Management and Environmental Planning

by

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San Francisco, California

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CERTIFICATION OF APPROVAL

I certify that I have read *Morphology Of Small, Discontinuous Montane Meadow Streams In The Sierra Nevada* by Michelle Laura Slocombe, and that in my opinion this work meets the criteria for approving a thesis submitted in partial fulfillment of the requirements for the degree: Master of Arts in Geography: Resource Management and Environmental Planning at San Francisco State University.

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Various fluvial geomorphic models have been developed to characterize the relationships between planform and bedform features of large alluvial channels; however, little information exists for meadow channel morphology. Field investigation of seven narrow, low-energy meadow stream reaches in the northern Sierra Nevada range of California revealed similarities and differences to larger alluvial channels. The average radius of curvature to channel width ratio (5.54) of the meadow streams was almost double that of larger alluvial streams (3.1), with a standard deviation of 4.66. Average meander wavelength to channel width ratio (22.43) was almost triple that of typical alluvial streams (8.5), with a standard deviation of 16.80. Bedform features occurred at an average of 6.72 channel widths, similar to typical pool-riffle spacing of 5-7 channel widths. Grass sod connected a series of scour pools, providing the same energy drop function as riffles or steps. Results suggest that bedform regularity is similar to typical pool-riffle systems but planform features are less developed. Restoration efforts can benefit from considering how planform and bedform channel patterns develop in these meadows.

I certify that the Abstract is a correct representation of the content of this thesis.

Chair, Thesis Committee

Date

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