

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

A thesis submitted to the faculty of
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In partial fulfillment of
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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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TABLE OF CONTENTS

List of Tables.....vii

List of Figures.....viii

Introduction.....1

 Physical Setting.....4

 Regional Land Use History.....5

 Study Site Descriptions.....8

Materials and Methods.....10

 Field Methods.....10

 Analysis and Comparison of Geomorphic Features.....13

Results and Discussion.....14

 Planform Characteristics16

 Radius of Curvature.....17

 Meander Wavelength.....23

 Straight Reach Length.....25

 Bedform Characteristics.....26

 Bedform Spacing.....27

 Pool-Forming Mechanisms.....36

 Errors and Uncertainties40

Conclusion.....42

References.....44

LIST OF TABLES

Table	Page
1. Summary of physical characteristics of study reaches	9
2. Summary of GPS accuracy after differential correction.....	11
3. Comparison of morphological data collected for study reaches.....	15
4. Morphological models of alluvial streams cited in the literature.....	16
5. Radius of curvature to channel width results.....	22
6. Meander wavelength to channel width results.....	24
7. Bedform and pool-riffle sequences to channel width ratios.....	33

LIST OF FIGURES

Figure	Page
1. Photograph of a grass riffle in Carman Creek.....	5
2. Aerial view of Knuthson Meadow pre-restoration.....	7
3. Aerial view of Knuthson Meadow post-restoration.....	7
4. Map of study site locations.....	8
5. Photographs of small, indistinct meadow channels.....	12
6. Diagram illustrating radius of curvature.....	17
7. Radius of curvature (r_c) for meadow stream bends.....	19-21
8. Longitudinal profiles with pool-riffle locations.....	28-31
9. Bedform distribution per reach.....	32
10. Comparison of bedform and pool-riffle sequence spacing.....	34
11. Partial longitudinal profile of Haskell Creek.....	36
12. Mechanisms causing the formation of pools.....	37
13. Photograph of scour pool in Three Corner Meadow.....	38
14. Photograph of a headcut step in sod in Haskell Creek.....	39
15. Photograph of a sod bridge in Rowland Creek.....	40