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Riparian Zones and Filter Strips in Agricultural Operations

(I)

January 1985 - April 1993
Quick Bibliography Series: QB 93-32
185 citations from AGRICOLA

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Water Quality Information Center

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1

NAL Call. No.: aSD11.A42

Above-ground biomass quantities and livestock production at big sacaton riparian areas in southeastern Arizona.

Cox, J.R.; Morton, H.L.

Fort Collins, Colo. : The Station; 1985.

General technical report RM - Rocky Mountain Forest and Range Experiment Station, United States, Forest Service (120): p. 305-309; 1985. Paper presented at the "Conference on Riparian Ecosystems and their Management: Reconciling Conflicting Uses," April 16-18, 1985, Tucson, Arizona. Includes references.

Language: English

Descriptors: Arizona; Sporobolus; Livestock; Stocking rate; Grazing effects; Biomass accumulation; Seasons; Mowing; Burning

2

NAL Call. No.: S451.M9M9

Altering cattle behavior through grazing management.

Davis, K.C.; Marlow, C.B.

Bozeman, Mont. : The Station; 1990.

Montana agresearch - Montana Agricultural Experiment Station, Montana University v. 7 (1): p. 11-14; 1990. Includes references.

Language: English

Descriptors: Montana; Cows; Calves; Grazing systems; Grazing behavior; Riparian vegetation

3

NAL Call. No.: TD223.P39

Antidesertification of riparian zones and control of nonpoint source pollution.

Skinner, Q.D.; Dodd, J.L.; Rodgers, J.D.; Smith, M.A.

Washington, D.C. : U.S. Environ Protection Agency, Office of Water Regul and Standards; 1985.

Perspectives on nonpoint source pollution : proceedings of a national conference, Kansas City, Missouri, May 19-22, 1985. p. 382-386; 1985. Includes references.

Language: English

Descriptors: Wyoming; Riparian vegetation; Streams; Desertification; Reclamation; Water pollution; Pollution by agriculture; Control

4

NAL Call. No.: FICHE S-72

Applicability of creams in filter strip design.

Flanagan, D.C.; Neibling, W.H.; Foster, G.R.; Burt, J.P.
St. Joseph, Mich. : The Society; 1986.
American Society of Agricultural Engineers (Microfiche
collection) (fiche no. 86-2043): 23 p.; 1986. Paper presented
at the 1986 Summer Meeting of the American Society of
Agricultural Engineers. Available for purchase from: The
American Society of Agricultural Engineers, Order Dept., 2950
Niles Road, St. Joseph, Michigan 49085. Telephone the Order
Dept. at (616) 429-0300 for information and prices. Includes
references.

Language: English

Descriptors: Models; Mathematics; Erosion; Groundwater
pollution; Fields; Grass strips; Filters; Pollution; Control
methods

5

NAL Call. No.: 292.9 AM34
Aquatic habitat condition index, stream type, and livestock
bank damage in northern Nevada.
Myers, T.J.; Swanson, S.
Bethesda, Md. : American Water Resources Association; 1991
Jul. Water resources bulletin v. 27 (4): p. 667-677; 1991 Jul.
Includes references.

Language: English

Descriptors: Nevada; Streams; Morphology; Riparian vegetation;
Livestock; Grazing effects; Freshwater fishes; Aquatic
environment; Habitats; Indexes; Stability; Watershed
management

Abstract: The quality of stream habitat varies for a variety
of natural and anthropogenic reasons not identified by a
condition index. However, many people use condition indices to
indicate management needs or even direction. To better sort
natural from livestock influences, stream types and levels of
ungulate bank damage were regulated to estimates of aquatic
habitat condition index and stream width parameters in a large
existing stream inventory data base. Pool/riffle ratio, pool
structure, stream bottom materials, soil stability, and
vegetation type varied significantly with stream type.
Pool/riffle ratio, soil and vegetation stability varied
significantly with ungulate bank damage level. Soil and
vegetation stability were highly cross-correlated. Riparian
area width did not vary significantly with either stream type
or ungulate bank damage. Variation among stream types
indicates that riparian management and monitoring should be
stream type and reach specific.

6

NAL Call. No.: 410 EC7
Autumnal resorption and accretion of trace metals in gallery
forest trees. Killingbeck, K.T.

Tempe, Ariz : Ecological Society of America; 1985 Feb.
Ecology : a publication of the Ecological Society of America
v. 66 (1): p. 283-286. ill; 1985 Feb. Includes references.

Language: English

Descriptors: Kansas; Prairies; Riparian forests; Forest trees;
Leaf analysis; Copper; Iron; Zinc; Manganese; Nutrient
recovery; Senescence; Resorption; Nutrient cycles

7

NAL Call. No.: SF85.A1R32
Beavers and riparian ecosystems.
Clements, C.
Denver, Colo. : Society for Range Management; 1991 Dec.
Rangelands v. 13 (6): p. 277-279; 1991 Dec. Includes
references.

Language: English

Descriptors: Western states of U.S.A.; Canada; Riparian
grasslands; Ecosystems; Castor canadensis; Castor fiber

8

NAL Call. No.: S544.3.W6W53
The benefits of well-managed stream corridors.
Craven, S.; Jackson, G.; Swenson, W.; Webendorfer, B.
Madison, Wis. : The Service; 1987.
Publication - University of Wisconsin, Cooperative Extension
Service (G3404): 8 p.; 1987.

Language: English

Descriptors: Wisconsin; Riparian vegetation; Erosion;
Riverbank protection; Runoff; Water pollution; Habitat
selection

9

NAL Call. No.: S539.5.A77
Big sacaton riparian grassland management: seasonal grazing
effects on plant and animal production.
Cox, J.R.; Gillen, R.L.; Ruyle, G.B.
New York, N.Y. : Springer; 1989.
Applied agricultural research v. 4 (2): p. 127-134; 1989.
Includes references.

Language: English

Descriptors: Sporobolus; Forage; Steers; Brahman; Riparian
vegetation; Grassland management; Grazing effects; Grazing
intensity; Natural regeneration; Beef production; Weight gain;
Climatic factors; Seasonal growth

Abstract: F1 Brahman steers annually grazed the same big
sacaton (*Sporobolus wrightii* Monro) pastures in either spring

(May 1-June 12), summer (July 1-August 12), or fall (September 1-October 12) for three years. Green forage accumulated gradually in spring, accumulated rapidly in summer and declined gradually in fall, but mean daily steer gains averaged 1.5, 0.8, and 0.5 lb/animal on spring, summer, and fall grazed pastures, respectively. Spring gains were superior because green forage quality was greatest when plants initiated growth in spring. Summer gains were directly affected by green forage quantity, and green forage quantity was dependent on highly variable summer rainfall amounts. Fall gains were consistently low because forage quality declines rapidly in fall when green forage transfers to dead forage. In the three years, more than 80% of the green forage disappeared during spring grazing but pastures recovered in subsequent summer growing seasons. If the land manager wishes to maximize animal production without damaging the renewable natural resource (plant production), it is recommended to graze big sacaton grasslands in spring, avoid these riparian grasslands in dry summers, and discontinue fall grazing.

10

NAL Call. No.: S539.5.A77

Big sacaton (*Sporobolus wrightii*) riparian grassland management: annual winter burning, annual winter mowing, and spring--summer grazing. Cox, J.R.; Morton, H.L. New York : Springer; 1986.

Applied agricultural research v. 1 (2): p. 105-111. ill; 1986. Includes references.

Language: English

Descriptors: Sporobolus; Grassland management; Burning; Mowing; Grazing; Winter; Spring; Summer

11

NAL Call. No.: SF85.A1R32

Biological importance of streambank stability. Bohn, C.

Denver, Colo. : Society for Range Management; 1986 Apr. Rangelands v. 8 (2): p. 55-56. ill; 1986 Apr. Includes references.

Language: English

Descriptors: Oregon; Streams; Banks; Stream erosion; Stability; Channels; Sediments; Nutrients; Aquatic environment; Vegetation

12

NAL Call. No.: A99.9 F764U

Bird and small mammal populations in a grazed and ungrazed riparian habitat in Idaho.

Medin, D.E.; Clary, W.P.

Ogden, Utah : The Station; 1990 Jul.

Research paper INT - U.S. Department of Agriculture, Forest Service, Intermountain Research Station (425): 10 p.; 1990 Jul. Literature review. Includes references.

Language: English

Descriptors: Idaho; Wildlife; Birds; Mammals; Habitats; Riparian vegetation; Grazing effects; Rangelands

13

NAL Call. No.: A99.9 F764U

Breeding bird populations in a grazed and ungrazed riparian habitat in Nevada. Medin, D.E.; Clary, W.P.

Ogden, Utah : The Station; 1991 Apr.

Research paper INT - U.S. Department of Agriculture, Forest Service, Intermountain Research Station (441): 7 p.; 1991 Apr. Includes references.

Language: English

Descriptors: Birds; Breeding; Riparian forests; Populus tremuloides; Salix; Habitats; Grazing effects

14

NAL Call. No.: SF85.A1R32

Cattle and fish on the Henry's Fork.

Platts, W.S.; Wagstaff, F.J.; Chaney, E.

Denver, Colo. : Society for Range Management; 1989 Apr.

Rangelands v. 11 (2): p. 58-62. ill., maps; 1989 Apr.

Includes references.

Language: English

Descriptors: Idaho; Cattle; Rainbow trout; Rivers; Angling; Riparian grasslands; Grazing

15

NAL Call. No.: 60.18 J82

Cattle feeding and resting patterns in a foothills riparian zone. Marlow, C.B.; Pogacnik, T.M.

Denver, Colo. : Society for Range Management; 1986 May.

Journal of range management v. 39 (3): p. 212-217. ill., maps; 1986 May. Includes references.

Language: English

Descriptors: Montana; Upland areas; Streams; Cattle; Feeding behavior; Animal behavior; Rest; Riparian vegetation; Grazing effects; Stocking rate; Seasonal behavior

16

NAL Call. No.: 60.18 J82

Cattle use of riparian meadows in the blue mountains of

northeastern Oregon. Gillen, R.L.; Krueger, W.C.; Miller, R.F.
Denver, Colo. : Society for Range Management; 1985 May.
Journal of range management v. 38 (3): p. 205-209. ill; 1985
May. Includes references.

Language: English

Descriptors: Oregon; Cattle; Grazing; Riparian vegetation;
Temperatures

17

NAL Call. No.: HC79.E5E5

Classification and spatial mapping of riparian habitat with
applications toward management of streams impacted by nonpoint
source pollution. Delong, M.D.; Brusven, M.A.
New York, N.Y. : Springer-Verlag; 1991 Jul.
Environmental management v. 15 (4): p. 565-571; 1991 Jul.
Includes references.

Language: English

Descriptors: Idaho; Habitats; Riparian vegetation; Erosion;
Pollution; Information systems; Mapping; Watersheds; Farmland

18

NAL Call. No.: 56.8 J822

Classifying rangeland riparian areas: the Nevada Task Force
approach. Swanson, S.; Miles, R.; Leonard, S.; Genz, K.
Ankeny, Iowa : Soil Conservation Society of America; 1988 May.
Journal of soil and water conservation v. 43 (3): p. 259-263.
ill; 1988 May. Includes references.

Language: English

Descriptors: Riparian vegetation; Rangelands; Land
classification; Ecosystems; Range management; Resource
conservation

19

NAL Call. No.: QK149.F269 1988

Common riparian plants of California a field guide for the
layman., 1st ed.. Faber, Phyllis M.; Holland, Robert F.
Mill Valley, Calif. : Pickleweed Press; 1988.
140 p. : ill. ; 31 cm. Includes index. Bibliography: p. 135.

Language: English; English

Descriptors: Riparian flora; California; Identification

20

NAL Call. No.: S622.2.C66

Community participation in soil and water conservation.
Benvenuti, D.N.

Ankeny, Iowa : Soil and Water Conservation Society; 1988.
Conservation farming on steep lands / W.C. Moldenhauer and
N.W. Hudson, editors. p. 247-253; 1988. Material originally
presented at a workshop held in San Juan, Puerto Rico, March
22-27, 1987, and organized by the World Association of Soil
and Water Conservation and the Soil and Water Conservation
Society.

Language: English

Descriptors: Brazil; Soil and water conservation; Settlement;
Gully control; Terracing; Sloping sites; Riparian forests;
Community involvement; Farm surveys; Farm surveys; Projects;
Quality controls; Coordination; Technical aid; Evaluation;
Integration

21

NAL Call. No.: QH541.5.T7J68

Comparative effects of *Acacia albida* and *Kigelia africana*
trees on soil characteristics in Zambezi riverine woodlands.

Dunham, K.M.

Cambridge : Cambridge University Press; 1991 May.

Journal of tropical ecology v. 7 (pt.2): p. 215-220; 1991 May.

Includes references.

Language: English

Descriptors: Zimbabwe; *Acacia albida*; *Kigelia africana*; Soil
fertility; Nitrogen; Carbon; Phosphorus; Potassium; Nutrient
availability; Nutrient content; Mineral content; Nitrogen
content; Spatial variation; Soil acidity; Woodland soils; Soil
organic matter; Riparian forests; Forest litter; Leaves

22

NAL Call. No.: 56.9 S03

Comparison of denitrification in two riparian soils.

Ambus, P.; Lowrance, R.

Madison, Wis. : The Society; 1991 Jul.

Soil Science Society of America journal v. 55 (4): p. 994-997;

1991 Jul. Includes references.

Language: English

Descriptors: Georgia; Coastal plain soils; Riparian forests;
Soil fertility; Denitrification; Sandy soils; Soil organic
matter; Soil depth; Soil water content; Soil amendments;
Chloramphenicol; Glucose; Nitrates; Nitrous oxide; *Pinus
elliottii*; *Liriodendron tulipifera*; *Nyssa sylvatica*; Nitrate
nitrogen; Ammonium nitrogen

Abstract: The factors controlling NO₃ removal in riparian
buffer systems are poorly understood. We measured
denitrification rates for two Coastal Plain, forested riparian
zone soils: Kinston fine loamy sand (fine-loamy, siliceous,
acid, thermic Typic Fluvaquent) and Alapaha loamy sand (loamy,

siliceous, thermic Arenic Plinthic Paleaquult). Kinston soils are more poorly drained and have higher organic matter than Alapaha soils. Surface soil and shallow aquifer samples were treated with solutions that contained chloramphenicol with either distilled water, NO₃-N, glucose-C, or NO₃, plus glucose. Denitrification potentials (N₂O production in the presence of acetylene) were significantly higher in Kinston soil for both depths. Surface samples from both soils showed significant responses to NO₃ additions but no response to C additions without NO₃. Subsurface samples, taken from the top of the aquifer, showed no significant response to either NO₃ or C treatments for either soil. Both soils showed a high degree of stratification within the top 10 cm, with 88 and 68% of denitrification potential in the top 2 cm for Alapaha and Kinston soils, respectively. Denitrification rates in cores were much lower than in slurries but rates in cores with NO₃ or NO₃-plus-glucose additions were significantly higher than unamended or C-amended cores for the Kinston soil. Although both soils respond to NO₃ additions, Kinston soils are better able to reduce incoming NO₃. These results indicate that denitrification in the shallow aquifer is a more important removal mechanism at the Kinston site than at the Alapaha site.

23

NAL Call. No.: aSD11.A42 A
comparison of riparian area ground data with large scale airphoto interpretation.
Cuplin, P.; Platts, W.S.; Casey, O.; Masinton, R.
Fort Collins, Colo. : The Station; 1985.
General technical report RM - Rocky Mountain Forest and Range Experiment Station, United States, Forest Service (120): p. 67-68; 1985. Paper presented at the "Conference on Riparian Ecosystems and their Management: Reconciling Conflicting Uses," April 16-18, 1985, Tucson, Arizona. Includes references.

Language: English

Descriptors: Riparian vegetation; Aerial photography; Land resources; Grazing effects

24

NAL Call. No.: QH541.5.R3P3 1984
Compatibility of livestock grazing strategies with riparian-stream systems. Platts, W.S.
Corvallis, Or. : Oregon State University; 1984.
Range watersheds, riparian zones and economics : interrelationships in management and use : Proceedings, 1984 Pacific Northwest Range Management Short Course / Oregon State University. p. 67-74; 1984. Includes references.

Language: English

Descriptors: Rangelands; Streams; Livestock; Riparian

vegetation; Range management; Vegetation management; Grazing systems; Grazing effects

25

NAL Call. No.: 412.9 N814

Concepts in stream riparian rehabilitation.

Van Haveren, B.P.; Jackson, W.L.

Washington, D.C. : Wildlife Management Institute; 1986.

Transactions of the ... North American Wildlife and Natural Resources Conference (51st): p. 280-289. ill; 1986. Includes references.

Language: English

Descriptors: Western states of U.S.A.; Reclamation; Revegetation; Riparian vegetation; River bank protection; Streams

26

NAL Call. No.: S622.2.C66

Conservation of cropland on steep slopes in eastern Africa.

Thomas, D.B.

Ankeny, Iowa : Soil and Water Conservation Society; 1988.

Conservation farming on steep lands / W.C. Moldenhauer and N.W. Hudson, editors. p. 140-149; 1988. Material originally presented at a workshop held in San Juan, Puerto Rico, March 22-27, 1987, and organized by the World Association of Soil and Water Conservation and the Soil and Water Conservation Society. Includes references.

Language: English

Descriptors: East Africa; Upland areas; Steepland soils; Sloping sites; Land resources; Perennial cropping; Terracing; Grass strips; Soil conservation

27

NAL Call. No.: S622.2.C66

Conservation practices and runoff water disposal on steep lands. Hudson, N.W.

Ankeny, Iowa : Soil and Water Conservation Society; 1988.

Conservation farming on steep lands / W.C. Moldenhauer and N.W. Hudson, editors. p. 117-128. ill; 1988. Material originally presented at a workshop held in San Juan, Puerto Rico, March 22-27, 1987, and organized by the World Association of Soil and Water Conservation and the Soil and Water Conservation Society. Literature review. Includes references.

Language: English

Descriptors: Soil and water conservation; Steepland soils; Sloping sites; Runoff control; Terracing; Grass strips; Case studies

28

NAL Call. No.: aSF84.84.N37 1985

Conserving the range resource today: summary.

Swenson, R.D.

Washington, D.C.? : U.S. Dept. of Agriculture : [U.S. G.P.O., 1986?]; 1986. National Range Conference, opportunities for the future : National Range Conference proceedings, Oklahoma City, Oklahoma, November 6-8, 1985. p. 77-79; 1986.

Language: English

Descriptors: U.S.A.; Range management; Ecosystems; Resource conservation; Range pastures; Riparian vegetation

29

NAL Call. No.: S451.M9M9

Controlling riparian zone damage with little forage loss.

Marlow, C.B.

Bozeman : The Station; 1985.

Montana agresearch - Montana Agricultural Experiment Station, Montana University v. 2 (3): p. 7. ill; 1985. Includes references.

Language: English

Descriptors: Montana; Range pastures; Beef cows; Riparian vegetation; Trampling; Pasture management; Grazing; Water conservation

30

NAL Call. No.: SF85.A1R32

Cool, clear water?.

Williamson, L.L.

Denver, Colo. : Society for Range Management; 1988 Aug.

Rangelands v. 10 (4): p. 167, 188; 1988 Aug.

Language: English

Descriptors: Water resource management; Water composition and quality; Resource conservation; Riparian vegetation; Grazing effects; Rangelands; Erosion; Range management; Private sector; Wildlife; Habitat destruction

31

NAL Call. No.: GB565.W8W9 1986

Crop water use studies.

Pochop, L.; Burman, R.; Kerr, G.

Laramie, Wyo. : The Center; 1986.

Wyoming Water 1986 and Streamside Zone Conference : proceedings : Wyoming's water doesn't wait while we debate : Casper, Wyoming, April 28-30, 1986 / sponsored by Wyoming Water Res Cent [and] UW Agric Ext Serv, Univ of WY. p.

111-116; 1986.

Language: English

Descriptors: Wyoming; Water use; Mountain grasslands; Meadows; Riparian vegetation; Evapotranspiration; Water supplies; Irrigation

32

NAL Call. No.: QH105.C2C36

Current condition of riparian resources in the Central Valley of California. Katibah, E.F.; Dummer, K.J.; Nedeff, N.E. Berkeley : University of California Press; 1984.

California riparian systems : ecology, conservation, and productive management / edited by Richard E. Warner and Kathleen M. Hendrix. p. 314-321. maps; 1984. Includes references.

Language: English

Descriptors: California; Riparian vegetation; Grazing effects; Land use; Water resource management; Aerial photography

33

NAL Call. No.: 60.18 J82

Declining forage availability effects on utilization and community selection by cattle.

Smith, M.A.; Rodgers, J.D.; Dodd, J.L.; Skinner, Q.D.

Denver, Colo. : Society for Range Management; 1992 Jul.

Journal of range management v. 45 (4): p. 391-395; 1992 Jul.

Includes references.

Language: English

Descriptors: Wyoming; Populus deltoides; Cattle; Upland areas; Streams; Seasonal fluctuations; Habitat selection; Grazing behavior; Plant communities; Forage; Crop quality; Crude protein; Protein content; Dry matter; Riparian vegetation; Stocking rate

Abstract: Land managers of salt desert shrub and sagebrush steppe vegetation have concerns regarding appropriate stocking rates in summer for ephemeral stream riparian zones because of elevated levels of use on woody vegetation. We determined utilization levels of forage species over time as a fixed animal density decreased available forage as a means of approximating the stocking rate suitable for an area and identifying plant species for monitoring. Trend in abundance of important plant species will ultimately determine appropriate stocking rate in a particular management situation. Forage utilization by cattle during mid-summer for 2 successive years was measured weekly for 3 weeks in streamside (channel and floodplain) and adjacent upland (terrace and saline upland) vegetation communities along the ephemeral stream. Measures were also made of crude protein and

dry matter content of plant species. Plant communities used by cattle were also recorded. Utilization of streamside and terrace vegetation declined markedly over the 3 weeks, while utilization of forage in saline uplands was lower than in other areas and did not decline over weeks of study. More cattle selected streamside and terrace areas with the most succulent forages than saline uplands with less succulent forages. Woody plants in channel areas, cottonwood (*Populus deltoides* Bartr. ex Marsh.) particularly, were higher in protein, more succulent, and more severely grazed than other species. Management of cottonwood probably limits the stocking rate used in these communities. Declines in weekly utilization of forages after the first week indicated intake may have been declining. If so, lower levels of utilization may be needed to maintain animal performance. Maintenance of cottonwoods and animal performance considerations may dictate a lower stocking rate than achieved in this midsummer study.

34

NAL Call. No.: Videocassette no.977

The Desert oasis executive producer, Don Floyd ; produced and directed by Lynn G. Ketchum ; written by Don Floyd, Lynn G. Ketchum.

University of Arizona, Cooperative Extension Service,
University of Arizona, Agricultural Sciences Communications
Tucson, Ariz. : Agricultural Communications, Division of Range
Resources, University of Arizona : Cooperative Extension
Service, University of Arizona, [1990?]; 1990.

1 videocassette (27 min., 26 sec.) : sd., col. ; 1/2 in. VHS.

Language: English

Descriptors: Desertification; Riparian ecology; Desert plants;
Deserts

Abstract: Discusses desertification, desert flora and fauna, and riparian areas in the desert. Dealing mainly with Arizona deserts, the video also presents the multiple uses of a desert and how to preserve the desert riparian areas and to retard the desertification process of overgrazing and drying up of water-ways.

35

NAL Call. No.: 60.18 J82

Differences in riparian vegetation structure between grazed areas and exclosures.

Schulz, T.T.; Leininger, W.C.

Denver, Colo. : Society for Range Management; 1990 Jul.

Journal of range management v. 43 (4): p. 295-299. ill; 1990 Jul. Includes references.

Language: English

Descriptors: Colorado; Cattle; *Poa palustris*; *Poa pratensis*;
Salix; Riparian vegetation; Grazing effects; Population

density; Plant community analysis; Regrowth; Grazing lands;
Mountain grasslands

36

NAL Call. No.: A99.9 F764U

Differences in vegetation biomass and structure due to cattle grazing in a northern Nevada riparian ecosystem.

Clary, W.P.; Medin, D.E.

Ogden, Utah : The Station; 1990 Aug.

Research paper INT - U.S. Department of Agriculture, Forest Service, Intermountain Research Station (427): 12 p. ill; 1990 Aug. Includes references.

Language: English

Descriptors: Nevada; Riparian grasslands; Grazing effects; Biomass production; Populus tremuloides; Salix; Poa pratensis; Regeneration; Stand structure

37

NAL Call. No.: 60.18 J82

Dynamics of vegetation along and adjacent to an ephemeral channel. Smith, M.A.; Dodd, J.L.; Skinner, Q.D.; Rodgers, J.D. Denver, Colo. : Society for Range Management; 1993 Jan.

Journal of range management v. 46 (1): p. 56-64; 1993 Jan.

Includes references.

Language: English

Descriptors: Wyoming; Riparian vegetation; Streams; Plant density; Grazing effects; Grasses; Perennials; Annuals; Pastures; Woody plants; Deserts; Floodplains; Channels; Upland areas; Precipitation; Sustainability

Abstract: Ephemeral channels may be greater contributors to nonpoint sediment loads than perennial channels because of their abundance and lower vegetative cover. This study examines above- and belowground standing crop responses of selected vegetation classes and density of shrubs to grazing use and yearly weather variation along an ephemeral stream in northcentral Wyoming. Aboveground biomass standing crop was determined yearly in channel, floodplain, and upland habitats in ungrazed and grazed pastures during the 4-year study. Belowground biomass and shrub densities were determined yearly in the channel habitat only. Perennial grass standing crop in channels did not respond to grazing but decreased up to 73% with decreases in frequency and amount of precipitation. In floodplains, perennial grasses were not responsive to grazing; annual grasses were twice as abundant in grazed pastures. Vegetation standing crop in uplands was not influenced by grazing. Over the study period in all pastures, standing crop of blue grama (*Bouteloua gracilis* (H.B.K.) Lag. ex Griffiths) declined 4 fold while cool-season grasses increased 5 fold. Shrub density did not increase as much in grazed as in ungrazed pastures. Root biomass of the channel decreased 23%

in years with less precipitation but was greater by 24% on concave than convex bank types. Location on channels influenced root biomass but grazing did not. Lack of general negative grazing influences on vegetation suggest short periods (10 days) of grazing as used in this study represent a sustainable management alternative for grazing in the cold desert.

38

NAL Call. No.: 281.9 M5842

An economic analysis of filter strips for controlling agricultural soil erosion.

Krieger, D.J.; Hoehn, J.P.; Vieux, B.E.

East Lansing, Mich. : The Department; 1991 Jul.

Agricultural economics report - Michigan State University, Department of Agricultural Economics (552): 22 p.; 1991 Jul.

Includes references.

Language: English

Descriptors: Erosion control; Filters; Agricultural land; Marginal analysis; Cost benefit analysis; Computer software

39

NAL Call. No.: 412.9 N814

Economic issues of grazing and riparian area management.

Wagstaff, F.J.

Washington, D.C. : Wildlife Management Institute; 1986.

Transactions of the ... North American Wildlife and Natural Resources Conference (51st): p. 272-279; 1986. Includes references.

Language: English

Descriptors: Grazing behavior; Grazing on public land; Livestock; Streams; Costs; Farm income

40

NAL Call. No.: 60.18 J82

Effects of cattle grazing on passerine birds nesting in riparian habitat. Taylor, D.M.

Denver, Colo. : Society for Range Management; 1986 May.

Journal of range management v. 39 (3): p. 254-258; 1986 May. Includes references.

Language: English

Descriptors: Oregon; Grazing; Cattle; Grazing effects; Birds; Habitats; Species; Population density; Riparian vegetation; Salix

41

NAL Call. No.: 412.9 N814

Effects of grazing management on streambanks.
Bohn, C.C.; Buckhouse, J.C.
Washington, D.C. : Wildlife Management Institute; 1986.
Transactions of the ... North American Wildlife and Natural
Resources Conference (51st): p. 265-271; 1986. Includes
references.

Language: English

Descriptors: Oregon; Grazing behavior; Grazing on public land;
Cervus; Livestock; Odocoileus hemionus; Runoff; Stocking rate;
Streams; Wildlife management

42

NAL Call. No.: aSD11.A42

The effects of large storm events on basin-range riparian
stream habitats. Platts, W.S.; Gebhardt, K.A.; Jackson, W.L.
Fort Collins, Colo. : The Station; 1985.
General technical report RM - Rocky Mountain Forest and Range
Experiment Station, United States, Forest Service (120): p.
30-34. maps; 1985. Paper presented at the "Conference on
Riparian Ecosystems and their Management: Reconciling
Conflicting Uses," April 16-18, 1985, Tucson, Arizona.
Includes references.

Language: English

Descriptors: Nevada; Utah; Streams; Riparian vegetation;
Stream erosion; Storms; Grazing effects

43

NAL Call. No.: S591.55.K4S64

Effects of tillage and grass filter strips on surface runoff
of water, nitrate, sediment, and atrazine.
Madison, C.E.; Blevins, R.L.; Frye, W.W.
Lexington, Ky. : The Department; 1992.
Soil science news & views - Cooperative Extension Service and
University of Kentucky, College of Agriculture, Department of
Agronomy v. 13 (5): 4 p.; 1992.

Language: English

Descriptors: Runoff; Agricultural chemicals; Sediment;
Farmland; No-tillage; Conservation tillage; Grass strips; Soil
conservation; Filtration; Water conservation; Erosion control;
Water pollution

44

NAL Call. No.: aSD11.A42

Emergency measures for streambank stabilization: an
evaluation. Schultze, R.F.; Wilcox, G.I.
Fort Collins, Colo. : The Station; 1985.
General technical report RM - Rocky Mountain Forest and Range
Experiment Station, United States, Forest Service (120): p.

59-61; 1985. Paper presented at the "Conference on Riparian Ecosystems and their Management: Reconciling Conflicting Uses," April 16-18, 1985, Tucson, Arizona.

Language: English

Descriptors: Stream channels; Erosion control; Revegetation; Riparian vegetation

45

NAL Call. No.: 56.8 J822

Erosion and deposition in a field/forest system estimated using cesium-137 activity.

Lowrance, R.; McIntyre, S.; Lance, C.

Ankeny, Iowa : Soil Conservation Society of America; 1988 Mar. Journal of soil and water conservation v. 43 (2): p. 195-199. maps; 1988 Mar. Includes references.

Language: English

Descriptors: U.S.A.; Erosion; Forests; Coastal plains; Sediments; Deposition; Estimates; Watersheds; Radioactive tracers; Sampling techniques

46

NAL Call. No.: aSD11.A42

Erosional downcutting in lower order riparian ecosystems: have historical changes been caused by removal of beaver?.

Parker, M.; Wood, F.J. Jr; Smith, B.H.; Elder, R.G.

Fort Collins, Colo. : The Station; 1985.

General technical report RM - Rocky Mountain Forest and Range Experiment Station, United States, Forest Service (120): p.

35-38. ill; 1985. Paper presented at the "Conference on Riparian Ecosystems and their Management: Reconciling Conflicting Uses," April 16-18, 1985, Tucson, Arizona.

Includes references.

Language: English

Descriptors: Riparian vegetation; Stream erosion; Sedimentation; Beaver

47

NAL Call. No.: TD428.A37E9

Evaluating nutrient and sediment losses from agricultural lands vegetative filter strips.

Dillaha, T. A.

United States, Environmental Protection Agency, Chesapeake Bay Program, Virginia Polytechnic Institute and State University, Dept. of Agricultural Engineering, Virginia Agricultural Experiment Station, Virginia Polytechnic Institute and State University, Dept. of Agronomy

Annapolis, MD : U.S. Environmental Protection Agency, Region III, Chesapeake Bay Liaison Office,; 1987.

xi, 93 p. : ill., form ; 28 cm. (CBP/TRS ; 4/87). Project number X-00315-01-0. This study was conducted in cooperation with the Virginia Polytechnic Institute and State University Departments of Agricultural Engineering and Agronomy and the Virginia Agricultural Experiment Station. "Chesapeake Bay Program"--Cover. Includes bibliographical references (p. 67-70).

Language: English

Descriptors: Agricultural pollution; Water; Sediment transport; Feedlot runoff

48

NAL Call. No.: FICHE S-72

Evaluation of sediment deposition upslope from grass filters. Guck, M.E.; Magette, W.L.; McClellan, P.W. St. Joseph, Mich. : The Society; 1987. American Society of Agricultural Engineers (Microfiche collection) (fiche no. 87-2088): 10 p. ill; 1987. Paper presented at the 1987 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Slopes; Sediments; Deposition; Grass strips; Filters; Measurement; Rill erosion

49

NAL Call. No.: 293.8 SE8

Evaluation of vegetative filter strips as a best management practice for feed lots. Dillaha, T.A.; Sherrard, J.H.; Lee, D.; Mostaghimi, S.; Shanholtz, V.O. Alexandria, Va. : The Federation; 1988 Jul. Journal - Water Pollution Control Federation v. 60 (7): p. 1231-1238; 1988 Jul. Includes references.

Language: English

Descriptors: Vegetation management; Sedimentation; Nutrients; Environmental pollution; Filters; Runoff; Nitrogen; Phosphorus

50

NAL Call. No.: 79.9 S08 (P)

Evaluation of vegetative filter strips using continuous simulation modeling techniques. Williams, R.D.; Nicks, A.D. Raleigh, N.C. : The Society :.; 1988. Proceedings - Southern Weed Science Society v. 41: p. 350; 1988. Paper presented at the "Meeting on Environmental

Legislation and its Effects on Weed Science," Jan 18/20, 1988, Tulsa, Oklahoma. Includes abstract.

Language: English

Descriptors: Herbicide residues; Runoff control; Grass strips; Simulation models

51

NAL Call. No.: 56.8 J822

Farmers' response to a filter strip program: results from a contingent valuation survey.

Purvis, A.; Hoehn, J.P.; Sorenson, V.L.; Pierce, F.J.

Ankeny, Iowa : Soil and Water Conservation Society of America; 1989 Sep. Journal of soil and water conservation v. 44 (5): p. 501-504; 1989 Sep. Includes references.

Language: English

Descriptors: Farmers; Filters; Soil conservation; Water pollution

52

NAL Call. No.: TD419.R47

Fate of alachlor and atrazine in a riparian zone field site.

Paterson, K.G.; Schnoor, J.L.

Alexandria, Va. : The Federation; 1992 May.

Water environment research v. 64 (3): p. 274-283; 1992 May. Includes references.

Language: English

Descriptors: Iowa; Alachlor; Atrazine; Herbicide residues; Field tests; Movement in soil; Plants; Uptake; Experimental plots; Zea mays; Populus

53

NAL Call. No.: QH545.A23E58

Field studies on the terrestrial behavior of actinide elements in East Tennessee.

Garten, C.T. Jr; Bondietti, E.A.; Trabalka, J.R.; Walker, R.L.; Scott, T.G. Oak Ridge, TN : Office of Scientific and Tech Information, United States Dept. of Energy; 1987.

Environmental research on actinide elements : proceedings of a symposium held at Hilton Head, South Carolina, November 7-11, 1983 / editors, John E. Pinder III ... [et al.].. p. 109-119. ill; 1987. Literature review. Includes references.

Language: English

Descriptors: Tennessee; Riparian vegetation; Elements; Flood plains; Field tests; Food chains; Rats

54

NAL Call. No.: 275.29 F66C

Forest grazing.

Tanner, G.W.

Gainesville, Fla. : The Service; 1988 Jun.

Circular - Florida Cooperative Extension Service (810): p.

6-8. ill; 1988 Jun. In the series analytic: Alternative Enterprises for Your Forest Land: Forest Grazing; Christmas Trees, Hunting Leases, Pine Straw, Fee Fishing and Firewood / edited by M.L. Duryea.

Language: English

Descriptors: Florida; Farm woodlands; Grazing tenancy; Grass strips; Underwood; Farm leases; Pines

55

NAL Call. No.: SF85.A1R32

Forty years of change in a shadscale stand in Idaho.

Sharp, L.A.; Sanders, K.; Rimbey, N.

Denver, Colo. : Society for Range Management; 1992 Dec.

Rangelands v. 12 (6): p. 313-328; 1992 Dec. Includes references.

Language: English

Descriptors: Idaho; Range management; Riparian grasslands; Atriplex confertifolia

56

NAL Call. No.: SF85.A1R32

The geomorphic process: effects of base level lowering on riparian management. Masters, L.S.; Burkhardt, J.W.; Tausch, R.

Denver, Colo. : Society for Range Management; 1991 Dec.

Rangelands v. 13 (6): p. 280-284; 1991 Dec. Includes references.

Language: English

Descriptors: Western states of U.S.A.; Riparian grasslands; Range management; Erosion; Water erosion

57

NAL Call. No.: aSD11.U52

Grazing and the riparian zone: impact and management perspectives. Behnke, R.J.; Raleigh, R.F.

Washington, D.C. : The Service; 1979.

General technical report WO - U.S. Department of Agriculture, Forest Service (12): p. 263-267; 1979. Paper presented at a "Symposium on Strategies for Protection and Management of Floodplain Wetlands and other Riparian Ecosystems," Dec 11-13, 1978, Callaway Gardens, Georgia. Includes references.

Language: English

Descriptors: Riparian vegetation; Grazing effects; Habitats; Wildlife; Environmental protection

58

NAL Call. No.: SF85.A1R32

Grazing management heads Colorado range in right direction.
Fowler, R.

Denver, Colo. : Society for Range Management; 1992 Dec.
Rangelands v. 12 (6): p. 308-312; 1992 Dec.

Language: English

Descriptors: Colorado; Range management; Grazing systems; Riparian grasslands

59

NAL Call. No.: SF85.3.K56

Grazing management in riparian areas.

Kinch, Gene

United States, Bureau of Land Management

Denver, CO : U.S. Dept. of the Interior, Bureau of Land Management, Service Center,; 1989.

44 p. : ill. ; 28 cm. (Technical reference (United States.

Bureau of Land Management) ; 1737-4.). September 1989.

"BLM/YA/PT-87/021+1737"--P. [2] of cover. Includes bibliographical references (p. 41-44).

Language: English; English

Descriptors: Range management; Riparian ecology; Grazing

60

NAL Call. No.: aSD11.A42

Grazing management influences on two brook trout streams in Wyoming. Hubert, W.A.; Lanka, R.P.; Wesche, T.A.; Stabler, F.
Fort Collins, Colo. : The Station; 1985.

General technical report RM - Rocky Mountain Forest and Range Experiment Station, United States, Forest Service (120): p. 290-294; 1985. Paper presented at the "Conference on Riparian Ecosystems and their Management: Reconciling Conflicting Uses," April 16-18, 1985, Tucson, Arizona. Includes references.

Language: English

Descriptors: Wyoming; Streams; Rangelands; Cattle; Grazing effects; Riparian vegetation; Habitats; Fishes

61

NAL Call. No.: QH540.J6

Groundwater nitrate and denitrification in a coastal plain

riparian forest. Lowrance, R.
Madison, Wis. : American Society of Agronomy; 1992 Jul.
Journal of environmental quality v. 21 (3): p. 401-405; 1992
Jul. Includes references.

Language: English

Descriptors: Georgia; Groundwater; Nitrate; Chloride; Ratios;
Denitrification; Nutrient availability; Organic compounds;
Groundwater flow; Fields; Riparian forests; Spatial
distribution; Temporal variation; Forest soils; Coastal plain
soils; Nitrous oxide

Abstract: Mechanisms of nitrate (NO₃) removal from
groundwater in riparian forests are poorly understood. This
study was conducted in the Georgia coastal plain to: (i)
determine changes in NO₃ and Cl concentrations within shallow
groundwater moving from a row-crop field to a stream; (ii)
determine the spatial and temporal distribution of
denitrification potential relative to changes in NO₃
concentrations; and (iii) determine whether NO₃ or C supply
was limiting denitrification potential. Nitrate and Cl
concentrations in groundwater were measured biweekly or
monthly for October 1988 through May 1990. Denitrification
potentials, indicated by the denitrification enzyme assay,
were measured bimonthly from October 1988 through October
1989. Modified potential measurements, lacking either NO₃, C,
or both, were also performed bimonthly. Both NO₃ and NO₃/C
ratios in groundwater decreased by a factor of 7 to 9 in the
first 10 m of forest. Within the next 40 m of forest, mean NO₃
concentration decreased from 1.80 to 0.81 mg NO₃-N L⁻¹.
Denitrification potential was more than two orders of
magnitude higher in the top 10 cm of soil than in the top 10
cm of the shallow aquifer. Denitrification potential was
consistently highest in surface soil nearest the field and
nearest the stream and was limited by NO₃ availability in all
surface soil samples. Denitrification potential was highest in
October and August. Although NO₃ is definitely being removed
from shallow groundwater, it is apparently not due to direct
denitrification from the saturated zone. High denitrification
potential in surface soils, especially near the field/forest
interface, may contribute to NO₃ disappearance from shallow
groundwater. Processes associated with intact riparian
vegetation appear to play the primary role in N removal.

62

NAL Call. No.: 65.9 S083 A
guide to the stabilisation of water courses by planting
indigenous trees. Tudor-Owen, R.P.D.; Wyatt, J.
Mount Edgecombe : The Association; 1991.
Proceedings of the annual congress - South African Sugar
Technologists' Association (65th): p. 73-76; 1991. Meeting
held on June 10-12, 1991, Durban and Mount Edgecombe, South
Africa. Includes references.

Language: English

Descriptors: South Africa; Watersheds; Riparian vegetation;
Trees; Grasses; Vegetated waterways; Afforestation; Planting;
Riverbank protection

63

NAL Call. No.: 60.18 J82

Habitat selection by cattle along an ephemeral channel.

Smith, M.A.; Rodgers, J.D.; Dodd, J.L.; Skinner, Q.D.

Denver, Colo. : Society for Range Management; 1992 Jul.

Journal of range management v. 45 (4): p. 385-390; 1992 Jul.

Includes references.

Language: English

Descriptors: Wyoming; Cattle; Habitat selection; Streams;
Seasonal fluctuations; Grazing effects; Feeding preferences;
Forage; Crop quality; Crude protein; Protein content; Dry
matter; Grazing behavior; Upland areas; Riparian vegetation

Abstract: Because of widespread concern about cattle grazing effects on riparian zones of public lands, seasonal habitat selection by cattle was studied along a cold desert area ephemeral waterway of northcentral Wyoming. Little is known of grazing effects on ephemeral streams compared to perennial streams. Cattle activity was monitored in small pastures and a surrounding large allotment in spring, summer, and fall. Observations included activity and habitat where it occurred. Concomitantly, utilization levels, protein content, and dry matter content of forages were determined in the small pastures. A higher percent of cattle selected channel and floodplain habitats than percent area of habitats while a lower percent of cattle selected upland habitat than percent of this habitat in the area. Utilization levels of forages except greasewood (*Sarcobatus vermiculatus* (Hook.) Torrey) in the floodplain were not greatly different among habitats. Protein and dry matter content of forages did not vary greatly among habitats, except greasewood had higher protein and lower dry matter than other species and received much higher use. Forage quality declined in summer and fall. Animal preference for channel habitat was attributed to more available forage in the channels. In contrast, selection of floodplains was due to succulence and high protein content of greasewood. Comparison of cattle selectivity between small pastures and the large allotment indicates that greater avoidance of upland areas by cattle is likely due to greater distances to drinking water in the large allotment.

64

NAL Call. No.: QH76.R47

High quality restoration of riparian ecosystems.

Baird, K.

Madison, Wis. : University of Wisconsin Press; 1989.

Restoration & management notes v. 7 (2): p. 60-64; 1989.

Includes references.

Language: English

Descriptors: California; Nature conservation; Birds;
Endangered species; Habitats; Revegetation; Riparian
vegetation; Weed competition

65

NAL Call. No.: 500 AS73

Historical channel narrowing and riparian vegetation expansion
in the Medicine Lodge River basin, Kansas, 1871-1983.

Martin, C.W.; Johnson, W.C.

Washington, D.C. : The Association; 1987 Sep.

Annals of the Association of American Geographers v. 77 (3):
p. 436-449. maps; 1987 Sep. Includes references.

Language: English

Descriptors: Kansas; Riparian vegetation; River basins; Soil
sedimentation; Erosion; Stream channels; Variations; History;
Land use; Surveys

66

NAL Call. No.: 410 M58

Hydrologic influences on leaf decomposition in a channel and
adjacent bank of a gallery forest stream.

Gurtz, M.E.; Tate, C.M.

Notre Dame, Ind. : University of Notre Dame; 1988 Jul.

American midland naturalist v. 120 (1): p. 11-21. maps; 1988
Jul. Includes references.

Language: English

Descriptors: Kansas; Quercus macrocarpa; Celtis occidentalis;
Riparian forests; Leaves; Decomposition; Streams; Prairies;
Flooding; Nitrogen content; Phosphorus; Plant ecology

67

NAL Call. No.: aSD11.A42

Impact of grazing on a riparian garter snake.

Szaro, R.C.; Belfit, S.C.; Aitkin, J.K.; Rinne, J.N.

Fort Collins, Colo. : The Station; 1985.

General technical report RM - Rocky Mountain Forest and Range
Experiment Station, United States, Forest Service (120): p.
359-363. ill; 1985. Paper presented at the "Conference on
Riparian Ecosystems and their Management: Reconciling
Conflicting Uses," April 16-18, 1985, Tucson, Arizona.
Includes references.

Language: English

Descriptors: Riparian forests; Cattle; Grazing effects;
Habitats; Snakes

68

NAL Call. No.: SF85.3.D48

Impacts of grazing intensity and specialized grazing systems on livestock response.

Malechek, J.C.

Boulder, Colo. : Westview Press; 1984.

Developing strategies for rangeland management : a report / prepared by the Committee on Developing Strategies for Rangeland Management, National Research Council/National Academy of Sciences. p. 1119-1128; 1984. Includes references.

Language: English

Descriptors: Grazing effects; Grazing intensity; Grazing systems; Riparian vegetation; Wildlife; Management

69

NAL Call. No.: SF85.3.D48

Impacts of grazing on wetlands and riparian habitat.

Platts, W.S.; Raleigh, R.F.

Boulder, Colo. : Westview Press; 1984.

Developing strategies for rangeland management : a report / prepared by the Committee on Developing Strategies for Rangeland Management, National Research Council/National Academy of Sciences. p. 1105-1117; 1984. Includes references.

Language: English

Descriptors: Grazing effects; Wetlands; Riparian vegetation; Range management; Wildlife management

70

NAL Call. No.: SF85.3.D48

Impacts of grazing on wetlands and riparian habitat: a review of our knowledge.

Skovlin, J.M.

Boulder, Colo. : Westview Press; 1984.

Developing strategies for rangeland management : a report / prepared by the Committee on Developing Strategies for Rangeland Management, National Research Council/National Academy of Sciences. p. 1001-1103. ill; 1984. Literature review. Includes references.

Language: English

Descriptors: Grazing effects; Grazing lands; Wetlands; Riparian vegetation

71

NAL Call. No.: SF85.A1R32

The importance of rancher input in solving riparian problems.

Thomas, H.S.

Denver, Colo. : Society for Range Management; 1991 Apr.

Rangelands v. 13 (2): p. 83-84; 1991 Apr.

Language: English

Descriptors: Range management; Riparian vegetation; Erosion control; Pastures; Cattle husbandry

72

NAL Call. No.: SF85.A1R32

Improving riparian habitats.

Floyd, D.; Ogden, P.; Roundy, B.; Ruyle, G.; Stewart, D.

Denver, Colo. : Society for Range Management; 1988 Jun.

Rangelands v. 10 (3): p. 132-134. ill., maps; 1988 Jun.

Includes references.

Language: English

Descriptors: Arizona; Range management; Rotational grazing; Riparian forests; National forests; Habitat improvement; Wetlands; Ecosystems; Nature conservancy; Wildlife conservation

73

NAL Call. No.: aSD11.A42

Increasing summer flow in small streams through management of riparian areas and adjacent vegetation: a synthesis.

Stabler, D.F.

Fort Collins, Colo. : The Station; 1985.

General technical report RM - Rocky Mountain Forest and Range

Experiment Station, United States, Forest Service (120): p.

206-210; 1985. Paper presented at the "Conference on Riparian

Ecosystems and their Management: Reconciling Conflicting

Uses," April 16-18, 1985, Tucson, Arizona. Includes

references.

Language: English

Descriptors: Stream flow; Riparian vegetation; Vegetation management; Grazing effects; Dams

74

NAL Call. No.: aSD11.A42

Interdependence of groundwater, riparian vegetation, and streambank stability: a case study.

Groeneveld, D.P.; Griepentrog, T.E.

Fort Collins, Colo. : The Station; 1985.

General technical report RM - Rocky Mountain Forest and Range

Experiment Station, United States, Forest Service (120): p.

44-48. ill., maps; 1985. Paper presented at the "Conference on

Riparian Ecosystems and their Management: Reconciling

Conflicting Uses," April 16-18, 1985, Tucson, Arizona.

Includes references.

Language: English

Descriptors: California; Riparian vegetation; Groundwater;
Stream channels; Stability; Resource conservation; Erosion
control

75

NAL Call. No.: SF85.A1R32
Livestock control with electrical and audio stimulation.
Quigley, T.M.; Sanderson, H.R.; Tiedemann, A.R.; McInnis, M.L.
Denver, Colo. : Society for Range Management; 1990 Jun.
Rangelands v. 12 (3): p. 152-155; 1990 Jun. Includes
references.

Language: English

Descriptors: Livestock; Behavior; Animal behavior; Riparian
grasslands; Electrical stimulation

76

NAL Call. No.: QH541.5.R3P3 1984
Livestock crazing and the riparian zone.
Bedell, T.E.
Corvallis, Or. : Oregon State University; 1984.
Range watersheds, riparian zones and economics :
interrelationships in management and use : Proceedings, 1984
Pacific Northwest Range Management Short Course / Oregon State
University. p. 60-66; 1984. Includes references.

Language: English

Descriptors: Livestock; Grazing effects; Riparian vegetation;
Controlled grazing

77

NAL Call. No.: aSD11.A42
Livestock grazing effects on southwestern streams: a complex
research problem. Rinne, J.N.
Fort Collins, Colo. : The Station; 1985.
General technical report RM - Rocky Mountain Forest and Range
Experiment Station, United States, Forest Service (120): p.
295-299. maps; 1985. Paper presented at the "Conference on
Riparian Ecosystems and their Management: Reconciling
Conflicting Uses," April 16-18, 1985, Tucson, Arizona.
Includes references.

Language: English

Descriptors: Streams; New Mexico; Livestock; Grazing effects;
Riparian vegetation; Habitats; Fishes

78

NAL Call. No.: HD241.C52
Livestock grazing on western riparian areas.

Chaney, Ed; Elmore, Wayne; Platts, William S.,
United States, Environmental Protection Agency
Eagle, Idaho : Produced for the U.S. Environmental Protection
Agency by the Northwest Resource Information Center,; 1990.
45 p. : col. ill., maps ; 28 cm. Cover title. "July 1990"--
T.p. verso. Includes bibliographical references (p. 44).

Language: English; English

Descriptors: Grazing; Riparian ecology; Wetland ecology; Water

79

NAL Call. No.: 60.18 J82

Livestock impacts on riparian ecosystems and streamside
management implications...a review.

Kauffman, J.B.; Krueger, W.C.

Denver, Colo. : Society for Range Management; 1984 Sep.

Journal of range management v. 37 (5): p. 430-438; 1984 Sep.

Literature review. Includes references.

Language: English

Descriptors: Streams; Riparian vegetation; Livestock farming;
Grazing; Water resources

80

NAL Call. No.: 100 OR3M

Livestock impacts on riparian systems.

Buckhouse, J.C.

Corvallis, Or. : The Station; 1985 May.

Special report - Oregon State University, Agricultural
Experiment Station (724): p. 43-48; 1985 May. Includes
references.

Language: English

Descriptors: Cattle farming; Riparian vegetation; Grazing;
Resource management

81

NAL Call. No.: aSD11.A42

Livestock management in the riparian ecosystem.

Bryant, L.D.

Fort Collins, Colo. : The Station; 1985.

General technical report RM - Rocky Mountain Forest and Range
Experiment Station, United States, Forest Service (120): p.
285-289. maps; 1985. Paper presented at the "Conference on
Riparian Ecosystems and their Management: Reconciling
Conflicting Uses," April 16-18, 1985, Tucson, Arizona.
Includes references.

Language: English

Descriptors: Livestock; Grazing effects; Controlled grazing;

Habitat improvement

82

NAL Call. No.: QH541.5.R3P3 1984

Livestock production possibilities on streamside meadows.

Vavra, M.

Corvallis, Or. : Oregon State University; 1984.

Range watersheds, riparian zones and economics :

interrelationships in management and use : Proceedings, 1984

Pacific Northwest Range Management Short Course / Oregon State University. p. 35-44; 1984. Includes references.

Language: English

Descriptors: Meadows; Streams; Riparian vegetation; Beef cattle; Controlled grazing; Beef production; Production possibilities

83

NAL Call. No.: 56.8 J822

Long-term sediment deposition in the riparian zone of a coastal plain watershed.

Lowrance, R.; Sharpe, J.K.; Sheridan, J.M.

Ankeny, Iowa : Soil Conservation Society of America; 1986 Jul.

Journal of soil and water conservation v. 41 (4): p. 266-271.

maps; 1986 Jul. Includes 23 references.

Language: English

Descriptors: South eastern states of U.S.A.; Erosion; Sediment pollution; Agricultural development; Environmental impact reporting; Quantitative analysis; Riparian vegetation; Ecosystems; Coastal plains; Watersheds; Humid zones; Subtropics

84

NAL Call. No.: aSD11.A48 no.263

Managing grazing of riparian areas in the intermountain range.

Clary, Warren P.; Webster, Bert F.

Intermountain Research Station (Ogden, Utah)

Ogden, UT : U.S. Dept. of Agriculture, Forest Service,

Intermountain Research Station; 1989.

11 p. ; 28 cm. (General technical report INT ; 263). Cover

title. May 1989. Includes bibliographical references.

Language: English

Descriptors: Grazing; Range management

85

NAL Call. No.: GB565.W8W9 1986

Managing riparian stream habitats.

Platts, W.S.

Laramie, Wyo. : The Center; 1986.
Wyoming Water 1986 and Streamside Zone Conference :
proceedings : Wyoming's water doesn't wait while we debate :
Casper, Wyoming, April 28-30, 1986 / sponsored by Wyoming
Water Res Cent [and] UW Agric Ext Serv, Univ of WY. p. 59-62;
1986. Literature review. Includes references.

Language: English

Descriptors: U.S.A.; Streams; Water management; Habitats; Land
use; Range management

86

NAL Call. No.: QH541.5.R3P3 1984 A
method for predicting riparian vegetation potential of
semiarid rangelands. Crouse, M.R.; Kindschy, R.
Corvallis, Or. : Oregon State University; 1984.
Range watersheds, riparian zones and economics :
interrelationships in management and use : Proceedings, 1984
Pacific Northwest Range Management Short Course / Oregon State
University. p. 18-24. ill; 1984. Includes references.

Language: English

Descriptors: Rangelands; Semiarid zones; Riparian vegetation;
Botanical composition; Livestock; Grazing effects; Site
factors; Prediction

87

NAL Call. No.: aSD11.A48 no.221
Methods for evaluating riparian habitats with applications to
management. Platts, William S.,
Ogden, Utah : U.S. Dept. of Agriculture, Forest Service,
Intermountain Research Service,; 1987.
177 p. : ill., maps ; 28 cm. (General technical report INT ;
221). Cover title. February 1987. Bibliography: p. 124-132.

Language: English

Descriptors: Riparian ecology; Stream conservation; Streambank
planting

88

NAL Call. No.: QH540.N3
Mitigating nonpoint-source nitrate pollution by riparian-zone
denitrification. Schipper, L.A.; Cooper, A.B.; Dyck, W.J.
Berlin, W. Ger. : Springer-Verlag; 1991.
NATO ASI series : Series G : Ecological sciences v. 30: p.
401-413; 1991. In the series analytic: Nitrate contamination:
Exposure, consequence, and control / edited by I. Bogardi and
R.D. Kuzelka. Proceedings of the NATO Advanced Research
Workshop on Nitrate Contamination: Exposure, Consequences, and
Control, September 9-14, 1990, Lincoln, Nebraska. Includes
references.

Language: English

Descriptors: Nitrate; Nitrate fertilizers; Water pollution; Runoff; Drainage; Denitrification; Denitrifying microorganisms; Lakes; Rivers; Surface water; Soil types (ecological)

89

NAL Call. No.: aG4182.T87J4 1980 .U5 Map
Mitigation area detail map, Turkey-Clay Creek Watershed, South Dakota figure 3-4.. Figure 3-4, mitigation area detail map, Turkey-Clay Creek Watershed, South Dakota
United States. Soil Conservation Service
Lincoln, Neb. : The Service,; 1980.
1 map ; on sheet 31 x 51 cm. 6-10-80. Source: 1977 county highway map, 1957 USGS topographic quad map (7.5'), and information from SCS field personnel. Includes location map. 5,0-37,875.

Language: English; English

Descriptors: Soil conservation; South Dakota; Turkey-Clay Creek Watershed; Maps; Streambank planting; South Dakota; Turkey-Clay Creek Watershed; Maps

90

NAL Call. No.: 290.9 AM3PS (EE)
Modeling phosphorus transport in grass buffer strips.
Lee, D.; Dillaha, T.A.; Sherrard, J.H.
New York, N.Y. : American Society of Civil Engineers, Environmental Engineering Division; 1989 Apr.
Journal of environmental engineering v. 115 (2): p. 409-427; 1989 Apr. Includes references.

Language: English

Descriptors: Grasses; Phosphorus; Metabolism; Ssimulation models

91

NAL Call. No.: aSD388.A1U52
New revetment design controls streambank erosion.
LaFayette, R.A.; Pawelek, D.W.
Washington, D.C. : The Staff; 1990 Jul.
Engineering field notes - U.S. Department of Agriculture, Forest Service, Engineering Staff v. 22: p. 23-31. ill; 1990 Jul. Includes references.

Language: English

Descriptors: New Mexico; Forestry engineering; Stream erosion; Stream training; Structures

92

NAL Call. No.: FICHE 290.9 AM32P

Nitrogen dynamics in the riparian zone.

Schnabel, R.R.

St. Joseph, Mich. : The Society; 1985.

Paper - American Society of Agricultural Engineers (Microfiche collection) (fiche no. 85-2028): 14 p.; 1985. Paper presented at the 1985 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, .

Language: English

Descriptors: Streams; Groundwater pollution; Nitrates

93

NAL Call. No.: QH84.8.B46

Nitrogen turnover rates in a riparian fen determined by 15N dilution. Ambus, P.; Mosier, A.; Christensen, S.

Berlin : Springer International; 1992.

Biology and fertility of soils v. 14 (4): p. 230-236; 1992.

Includes references.

Language: English

Descriptors: Denmark; Fen soils; Mineralization; Nitrogen; Isotope labeling; Nitrate reduction; Nitrification; Nitrogen cycle; Soil depth; Soil fertility; Ammonium

94

NAL Call. No.: 292.8 W295

Nitrous oxide dissolved in soil solution: an insignificant pathway of nitrogen loss from a southeastern hardwood forest. Davidson, E.A.; Swank, W.T.

Washington, D.C. : American Geophysical Union; 1990 Jul.

Water resources research v. 26 (7): p. 1687-1690; 1990 Jul.

Includes references.

Language: English

Descriptors: Forest soils; Riparian forests; Robinia pseudoacacia; Soil solution; Watersheds; Nitrous oxide; Nitrate nitrogen; Nitrogen; Losses from soil systems; Solubility; Groundwater; Streams; Nitrogen content; Water composition and quality; Seasonal fluctuations; Soil depth

Abstract: Nitrous oxide is soluble and can accumulate in soil solution when gaseous diffusion is restricted. The importance of N losses via degassing of N₂O from groundwater entering surface streams is unknown. Measurements of N₂O in soil solution revealed patterns of seasonal and spatial variation that were consistent with ecosystem regulation of denitrification. The highest concentrations were observed in the riparian zone in May, when soil NO₃⁻, temperature and

moisture were conducive for denitrification. At each of the other sample dates and sites, at least one of these factors appeared to prevent significant N₂O accumulation in soil solution. Extrapolation of the highest observed N₂O concentrations to an annual basis corresponded to a loss of only 56 g N ha⁻¹ yr⁻¹. Denitrification in the riparian zone may be an important fate of N in this hardwood forest, but N₂O in soil solution does not appear to be a significant pathway of N loss. This site might be expected to produce N₂O at higher rates than most hardwood forests, but extrapolation of the highest calculated losses from soil solution over the global area occupied by hardwood forest indicates that this source of N₂O is insignificant for global atmospheric budgets.

95

NAL Call. No.: 410 EC7

Nutrient budgets for agricultural watersheds in the southeastern coastal plain.

Lowrance, R.R.; Leonard, R.A.; Asmussen, L.E.; Todd, R.L.

Tempe, Ariz : Ecological Society of America; 1985 Feb.

Ecology : a publication of the Ecological Society of America v. 66 (1): p. 287-296. ill., maps; 1985 Feb. Includes references.

Language: English

Descriptors: Georgia; Coastal plains; Watersheds; Riparian forests; Nutrient cycles; Cycling in ecosystems; Pollution by agriculture; Fertilizers; Water resource management; Stream flow; Runoff

96

NAL Call. No.: 410 EC7

Nutrient dynamics in an agricultural watershed: observations on the role of a riparian forest.

Peterjohn, W.T.; Correll, D.L.

Tempe, Ariz : Ecological Society of America; 1984 Oct.

Ecology : a publication of the Ecological Society of America v. 65 (5): p. 1466-1475. ill., maps; 1984 Oct. Includes references.

Language: English

Descriptors: Maryland; River basins; Watersheds; Riparian forests; Farmland; Fertilizers; Runoff; Surface water; Groundwater; Nutrient cycles; Water pollution; Pollution by agriculture

97

NAL Call. No.: S17.N4

Nutrient retention and processing in New Zealand streams: the influence of riparian vegetation.

Howard-Williams, C.; Pickmere, S.; Davies, J.

Palmerston North : The Dunmore Press; 1986 May.

New Zealand agricultural science v. 20 (2): p. 110-114. ill., maps; 1986 May. Includes references.

Language: English

Descriptors: New Zealand; Streams; Vegetation; Nitrogen retention; Water pollution

98

NAL Call. No.: 412.9 N814

Options for managing livestock in riparian habitats.

Davis, J.W.

Washington, D.C. : Wildlife Management Institute; 1986.

Transactions of the ... North American Wildlife and Natural Resources Conference (51st): p. 290-297; 1986. Includes references.

Language: English

Descriptors: Habitat destruction; Habitat improvement; Animal husbandry; Environmental impact reporting; Grazing effects; Erosion; Overgrazing; Trampling

99

NAL Call. No.: S544.3.N3C66

Options for riparian grazing management.

Swanson, S.

Reno, Nev. : The College; 1986.

Fact sheet - College of Agriculture, University of Nevada-Reno, Nevada Cooperative Extension (86-77): 4 p.; 1986. Includes references.

Language: English

Descriptors: Nevada; Cattle; Riparian vegetation; Range management; Grazing

100

NAL Call. No.: 56.9 S03

Phosphorus redistribution from cultivated fields into riparian areas. Cooper, J.R.; Gilliam, J.W.

Madison, Wis. : The Society; 1987 Nov.

Soil Science Society of America journal v. 51 (6): p. 1600-1604. ill., maps; 1987 Nov. Includes references.

Language: English

Descriptors: North Carolina; Phosphorus; Pollution by agriculture; River basins; Wetlands

101

NAL Call. No.: SF85.A1R32 A

pitch for Badger Creek.

Schwien, J.
Denver, Colo. : Society for Range Management; 1991 Aug.
Rangelands v. 13 (4): p. 181-182; 1991 Aug.

Language: English

Descriptors: Colorado; Streams; Rotational grazing; Riparian
vegetation; Watersheds

102

NAL Call. No.: 60.18 J82
Prescribed grazing as a secondary impact in a western riparian
floodplain. Sedgwick, J.A.; Knopf, F.L.
Denver, Colo. : Society for Range Management; 1991 Jul.
Journal of range management v. 44 (4): p. 369-373; 1991 Jul.
Includes references.

Language: English

Descriptors: Colorado; Floodplains; Riparian grasslands;
Riparian vegetation; Autumn; Controlled grazing; Cattle;
Grazing effects; Flooding; Biomass; Biomass production;
Environmental impact; Plant ecology; Botanical composition;
Community ecology; Salix; Spartina; Populus; Leaves; Forage

Abstract: The effect of late-autumn cattle grazing on plant
biomass was examined in a western Great Plains cottonwood
riparian zone prone to catastrophic flooding every 5-8 years.
Following 1 year of pre-treatment data collection in 1982,
five 16-ha pastures were grazed from 1982 to 1984 and compared
to 5 control pastures within the South Platte River floodplain
in northeastern Colorado. At a prescribed grazing level of
0.46 ha/AUM, riparian vegetation proved to be resilient to the
impacts of grazing. We detected only a few significant
treatment effects for above-ground biomass after succeeding
growing seasons. Willows (*Salix* spp.) responded negatively to
grazing whereas biomass of prairie cordgrass (*Spartina*
pectinata Link) was greater on grazed plots. Yearly changes in
above-ground biomass, especially dramatic following a severe
flood in 1983, suggest that periodic, catastrophic flooding is
a major perturbation to the ecosystem, and in conjunction with
our results on grazing impacts, indicate that dormant-season
grazing within Soil Conservation Service (SCS) guidelines is a
comparatively minor impact within the floodplain. In addition,
grazing impacts were probably further mitigated by a major
forage supplement of cottonwood leaves which was available at
the time of cattle introductions. This local forage supplement
ultimately created a lighter grazing treatment than that
originally prescribed.

103

NAL Call. No.: SF85.A1R32
Priorities for riparian management.
Swanson, S.
Denver, Colo. : Society for Range Management; 1989 Oct.

Rangelands v. 11 (5): p. 228-230. ill; 1989 Oct. Includes references.

Language: English

Descriptors: Nevada; Sedges; Gully erosion; Stream erosion; Riparian vegetation; Watershed management; Ranking

104

NAL Call. No.: aSF84.84.N37 1985

Processes of riparian systems: back to basics.

Elmore, W.

Washington, D.C.? : U.S. Dept. of Agriculture : [U.S. G.P.O., 1986?]; 1986. National Range Conference, opportunities for the future : National Range Conference proceedings, Oklahoma City, Oklahoma, November 6-8, 1985. p. 75-76; 1986.

Language: English

Descriptors: U.S.A.; Riparian vegetation; Rangelands; Degradation; Stream conservation; Grazing systems; Range management

105

NAL Call. No.: aSD11.A42

Quantification of nitrate uptake by riparian forests and wetlands in an undisturbed headwaters watershed.

Rhodes, J.; Skau, C.M.; Greenlee, D.; Brown, D.L.

Fort Collins, Colo. : The Station; 1985.

General technical report RM - Rocky Mountain Forest and Range Experiment Station, United States, Forest Service (120): p. 175-179. maps; 1985. Paper presented at the "Conference on Riparian Ecosystems and their Management: Reconciling Conflicting Uses," April 16-18, 1985, Tucson, Arizona. Includes references.

Language: English

Descriptors: Riparian forests; Watersheds; Wetlands; Riparian vegetation; Nitrates; Nutrient uptake; Nutrient transport

106

NAL Call. No.: GB565.W8W9 1986 A

ranch dependent on streamside zone grazing.

Healy, M.W.

Laramie, Wyo. : The Center; 1986.

Wyoming Water 1986 and Streamside Zone Conference : proceedings : Wyoming's water doesn't wait while we debate : Casper, Wyoming, April 28-30, 1986 / sponsored by Wyoming Water Res Cent [and] UW Agric Ext Serv, Univ of WY. p. 167; 1986.

Language: English

Descriptors: Wyoming; Grazing; Farm management; Riparian
vegetation; Grazing on public land

107

NAL Call. No.: GB565.W8W9 1986

Ranch management of streamside zones.

Sun, K.R.

Laramie, Wyo. : The Center; 1986.

Wyoming Water 1986 and Streamside Zone Conference :
proceedings : Wyoming's water doesn't wait while we debate :
Casper, Wyoming, April 28-30, 1986 / sponsored by Wyoming
Water Res Cent [and] UW Agric Ext Serv, Univ of WY. p.
155-166. ill; 1986.

Language: English

Descriptors: Wyoming; Range management; Riparian vegetation;
History; Desert climate; Controlled grazing

108

NAL Call. No.: QH541.5.R3P3 1984

Range watersheds, riparian zones and economics
interrelationships in management and use : Proceedings, 1984
Pacific Northwest Range Management Short Course.

Pacific Northwest Range Management Short Course 1984 :

Pendleton, OR. Corvallis, Or. : Oregon State University,;
1984.

98 p. : ill. ; 28 cm. Cover title. Includes bibliographies.

Language: English

Descriptors: Range management; Northwest, Pacific; Congresses;
Riparian ecology; Northwest, Pacific; Congresses; Watershed
management; Northwest, Pacific; Congresses

109

NAL Call. No.: QH541.5.R3P3 1984

Rangeland erosion: a question of measurement.

Barrett, H.

Corvallis, Or. : Oregon State University; 1984.

Range watersheds, riparian zones and economics :
interrelationships in management and use : Proceedings, 1984
Pacific Northwest Range Management Short Course / Oregon State
University. p. 75-77; 1984.

Language: English

Descriptors: Rangelands; Watersheds; Erosion; Riparian
vegetation; Measurement; Soil conservation

110

NAL Call. No.: aSD11.U52

Rangelands of southwestern United States.

Smith, E.L.

Washington, D.C. : The Service; 1983 Sep.

USDA Forest Service general technical report WO (36): p. 11-18. ill; 1983 Sep. Paper presented at the "Workshop on Wildlife and Range Research Needs in Northern Mexico and Southwestern United States," April 20-24, 1981, Rio Rico, Arizona. Includes references.

Language: English

Descriptors: Arizona; New Mexico; Texas; Rangelands; Rangeland soils; Climate; Geology; Geomorphology; Vegetation; Ecosystems; Forest ecology; Riparian vegetation

111

NAL Call. No.: QH105.C2C36

Regional riparian reserarch and a multi-university approach to the special problem of livestock grazing the Rocky Mountains and Great Plains. Crumpacker, D.W.

Berkeley : University of California Press; 1984.

California riparian systems : ecology, conservation, and productive management / edited by Richard E. Warner and Kathleen M. Hendrix. p. 413-413; 1984. Includes references.

Language: English

Descriptors: Riparian vegetation; Livestock; Grazing effects; Regeneration

112

NAL Call. No.: aSD11.A42

REM: a model for Riparian Ecosystem Management in agricultural watersheds. Lowrance, R.; Shirmohammadi, A.

Fort Collins, Colo. : The Station; 1985.

General technical report RM - Rocky Mountain Forest and Range Experiment Station, United States, Forest Service (120): p.

237-240. ill; 1985. Paper presented at the "Conference on Riparian Ecosystems and their Management: Reconciling Conflicting Uses," April 16-18, 1985, Tucson, Arizona.

Includes references.

Language: English

Descriptors: Watersheds; Agricultural regions; Ecosystems; Riparian vegetation; Resource management; Nutrient transport; Models

113

NAL Call. No.: aSD11.U52

Repairing flood-damaged streams in the Pacific Northwest.

Lines, I.L. Jr; Carlson, J.R.; Corthell, R.A.

Washington, D.C. : The Service; 1979.

General technical report WO - U.S. Department of Agriculture, Forest Service (12): p. 195-200. ill; 1979. Paper presented

at a "Symposium on Strategies for Protection and Management of Floodplain Wetlands and other Riparian Ecosystems," Dec 11-13, 1978, Callaway Gardens, Georgia. Includes references.

Language: English

Descriptors: Oregon; Washington; Streams; Erosion control; Floods; Rehabilitation; Geomorphology; Riparian vegetation

114

NAL Call. No.: S622.S37 no.15 A

review of information relevant to the riverine woodland and forest rangelands of south-western New South Wales..

Rangeland review : southern riverine woodlands

Dalton, K. L.

Chatswood, N.S.W. : Soil Conservation Service of N.S.W., ; 1989. 313 p. : ill., maps ; 28 cm. (S.C.S. technical report ; no. 15.). March 1989. Cover title: Rangeland review: southern riverine woodlands. Preparation and publication of this report were funded by the National Soil Conservation Program. Includes bibliographical references (p. 283-313).

Language: English

Descriptors: Rangelands; Floodplains; Range plants; Riparian flora; Forest flora; Botany

115

NAL Call. No.: QH540.J6

Riparian afforestation effects on water yields and water quality in pasture catchments.

Smith, C.M.

Madison, Wis. : American Society of Agronomy; 1992 Apr.

Journal of environmental quality v. 21 (2): p. 237-245; 1992 Apr. Includes references.

Language: English

Descriptors: New Zealand; Pinus radiata; Afforestation; Watersheds; Catchment hydrology; Streams; Riparian forests; Water quality; Sediment; Nitrogen; Water yield; Phosphorus; Pastures; Transpiration; Water flow; Interception; Runoff; Overland flow

Abstract: The flow records for two pasture headwater catchments for 9 yr before, and 9 yr after riparian afforestation in one catchment were compared. Average rainfall was 1021 mm per yr. Riparian afforestation reduced water yields by 68 to 104 mm (21-55%) when the Pinus radiata stand was 8 to 10 yr old. Delayed runoff declined by 52 to 93 mm per yr (27-63%). Afforestation reduced the quickflow yield in 1 yr (22 mm or 40%). Peak flows declined in small events, were not affected in medium-sized events, and may have increased in large events. The large reductions in yield indicate that the riparian zone had a disproportionately important influence on

catchment hydrology. They are attributed to high transpiration losses from the riparian pine in seasons with water deficits, and higher than usual forest interception losses because of the small-scale planting. Streamwater sediment, total and dissolved N and P concentrations in these two catchments and another riparian afforested catchment were monitored for 2 yr. Concentrations were generally lower in the completely pastured catchment. Estimated annual sediment, total P, Kjeldahl N, and nitrate exports from the pasture catchment were 31 to 60%, 70%, 61 to 64% and 58 to 74% of those from the riparian afforested catchments in spite of a higher water yield. Possible explanations for the poor water quality in riparian afforested catchments are described including the lack of riparian wetlands, in-stream vegetation, and close riparian ground cover. The consequences of riparian afforestation in pasture catchments may not readily be predicted from the impacts of complete catchment afforestation.

116

NAL Call. No.: SF85.A1R32

Riparian area definition: a viewpoint.

Anderson, E.W.

Denver, Colo. : Society for Range Management; 1987 Apr.

Rangelands v. 9 (2): p. 70; 1987 Apr.

Language: English

Descriptors: U.S.A.; Riparian vegetation; Wetlands; Range management; Identification

117

NAL Call. No.: 56.9 S03

Riparian areas as filters for agricultural sediment.

Cooper, J.R.; Gilliam, J.W.; Daniels, R.B.; Robarge, W.P.

Madison, Wis. : The Society; 1987 Mar.

Soil Science Society of America journal v. 51 (2): p. 416-420. maps; 1987 Mar. Includes references.

Language: English

Descriptors: North Carolina; Riparian vegetation; Sediments; Drainage; Watersheds; Deposition; Deposition site; Erosion; Watershed management; Cesium; Analytical methods

118

NAL Call. No.: SF85.A1R32

Riparian areas: perceptions in management.

Elmore, W.; Beschta, R.L.

Denver, Colo. : Society for Range Management; 1987 Dec.

Rangelands v. 9 (6): p. 260-265. ill; 1987 Dec.

Language: English

Descriptors: Oregon; Rangelands; Riparian vegetation; Arid

zones; Range management; Watershed management; Environmental impact reporting; Ecosystems; Flooding; Revegetation; Grazing effects; Catchment planning

119

NAL Call. No.: 100 OR3M

Riparian erosion inside and outside of exclosures on Mill and McKay Creeks: a validation of management.

Buckhouse, J.C.; Bunch, T.R.

Corvallis, Or. : The Station; 1985 Jun.

Special report - Oregon State University, Agricultural Experiment Station (743): p. 29-30; 1985 Jun.

Language: English

Descriptors: Oregon; Streams; Erosion; Grazing systems; Pasture management

120

NAL Call. No.: S605.5.A43

Riparian forest communities and their role in nutrient conservation in an agricultural watershed.

Fail, J.L. Jr; Haines, B.L.; Todd, R.L.

Greenbelt, Md. : Institute for Alternative Agriculture; 1987.

American journal of alternative agriculture v. 2 (3): p.

114-121. maps; 1987. Includes references.

Language: English

Descriptors: Georgia; Watersheds; Riparian forests; Upland areas; Nutrient cycles

121

NAL Call. No.: SF85.A1R32

Riparian grazing guidelines for the Intermountain region.

Clary, W.P.; Webster B.F.

Denver, Colo. : Society for Range Management; 1990 Aug.

Rangelands v. 12 (4): p. 209-212; 1990 Aug. Includes

references.

Language: English

Descriptors: Western states of U.S.A.; Riparian grasslands; Grazing; Grassland management

122

NAL Call. No.: GB705.A6H9

Riparian habitats of the southeast Sierrita mountains: vanished perennial habitats.

Zauderer, J.

Tucson, Ariz. : American Water Resources Association; 1989.

Hydrology and water resources in Arizona and the Southwest v. 19: p. 59-77. ill., maps; 1989. Paper presented at the

"Meetings of the Arizona Section American Water Resources Association and the Hydrology Section Arizona-Nevada Academy of Science on Hydrology and Water Resources in Arizona and the Southwest," April 15, 1989, Las Vegas, Nevada. Includes references.

Language: English

Descriptors: Arizona; Riparian vegetation; Canopy; Mountain areas; Altitude; Zoning; Rivers; Reservoirs; Habitats; Eroded soils; History

123

NAL Call. No.: QH540.J6

Riparian losses of nitrate from agricultural drainage waters. Jacobs, T.C.; Gilliam, J.W. Madison, Wis. : American Society of Agronomy; 1985 Oct. Journal of environmental quality v. 14 (4): p. 472-478. ill., maps; 1985 Oct. Includes references.

Language: English

Descriptors: North Carolina; Watersheds; Coastal plains; Riparian forests; Pollution by agriculture; Nitrates; Denitrification; Drainage water; Riparian vegetation; Drainage systems; Soil types (genetic)

124

NAL Call. No.: SF85.A1R32

Riparian management improves Western rangeland. Campsey, L. Denver, Colo. : Society for Range Management; 1991 Feb. Rangelands v. 13 (1): p. 26-27; 1991 Feb.

Language: English

Descriptors: Nevada; Cattle farming; Rangelands; Range management; Riparian grasslands

125

NAL Call. No.: S544.3.N3C66

Riparian pastures. Swanson, S. Reno, Nev. : College of Agriculture, University of Nevada-Reno, Nevada Cooperative Extension; 1987. Fact sheet - College of Agriculture, University of Nevada-Reno, Nevada Cooperative Extension (87-53): 3 p.; 1987. Includes references.

Language: English

Descriptors: Pasture management; Riparian vegetation; Grazing; Control; Fencing

126

NAL Call. No.: 409.6 S08

Riparian plant communities of the Fort Bayard watershed in southwestern New Mexico.

Medina, A.L.

Austin : Southwestern Association of Naturalists; 1986 Sep11. The Southwestern naturalist v. 31 (3): p. 345-359. ill; 1986 Sep11. Includes references.

Language: English

Descriptors: New Mexico; Riparian vegetation; Plant communities; Cluster analysis; Populus; Juglans; Acer; Alnus; Salix; Soil properties; Soil types; Grazing effects; Plant ecology

127

NAL Call. No.: SF85.A1R32

Riparian reminiscences.

Kindschy, R.R.

Denver, Colo. : Society for Range Management; 1987 Apr. Rangelands v. 9 (2): p. 71-74. ill; 1987 Apr. Includes references.

Language: English

Descriptors: Oregon; Riparian vegetation; Grazing effects; Revegetation; Plant succession; Program evaluation; Range management

128

NAL Call. No.: SF85.A1R32 A

riparian research program.

Prouty, M.

Denver, Colo. : Society for Range Management; 1987 Dec. Rangelands v. 9 (6): p. 271-272. ill; 1987 Dec.

Language: English

Descriptors: Nevada; Idaho; Utah; Riparian vegetation; Plant ecology; Resource management; Rangelands; Research projects; Environmental impact reporting

129

NAL Call. No.: QH301.N32

Riparian responses to various grazing systems and to periodic ice floes. Buckhouse, J.C.

New York, N.Y. : Plenum Press; 1986.

NATO advanced science institutes series : Series A : Life sciences v. 108: p. 79-86. maps; 1986. In the series analytic: Grazing research at northern latitudes / edited by O. Gudmundsson. Paper presented at a Workshop, August 5-10, 1985, Hvanneyri, Iceland. Literature review. Includes

references.

Language: English

Descriptors: Oregon; Grazing systems; Riparian forests; Ice; Livestock; Pasture management; Erosion

130 NAL Call. No.: SK351.W523
Riparian revegetation in California.
Gray, R.L.; Snieckus, R.; Wilcox, G.
Reno, Nev. : Wildlife Society, Western Section, and Am.
Fisheries Soc., California-Nevada Chapter; 1984.
Cal-Neva wildlife. p. 26-32; 1984. Includes references.

Language: English

Descriptors: California; Riparian vegetation; Wildlife conservation; Soil conservation; Flood control; Salix; Revegetation

131
NAL Call. No.: S601.D4
Riparian stands.
Volny, S.
Amsterdam : Elsevier Scientific Pub. Co; 1984.
Developments in agricultural and managed-forest ecology v. 14:
p. 423-453. ill; 1984. Includes list of tree species suitable
for riparian stands.

Language: English

Descriptors: Riparian forests; Riparian vegetation; Erosion control; River bank protection

132
NAL Call. No.: SK351.W523
Riparian stream management.
Platts, W.S.
Sacramento, CA : Wildlife Society, Western Section; 1986.
Transactions of the Western Section of the Wildlife Society v.
22: p. 90-93; 1986. Meeting held on January 23-25, 1986,
Sparks, Nevada. Includes references.

Language: English

Descriptors: Riparian vegetation; Rangelands; Stream training; Watershed management

133
NAL Call. No.: QH105.C2C36
Riparian system/livestock grazing interaction research in the
intermountain west.
Platts, W.S.

Berkeley : University of California Press; 1984.
California riparian systems : ecology, conservation, and
productive management / edited by Richard E. Warner and
Kathleen M. Hendrix. p. 424-429. ill., maps; 1984. Includes
references.

Language: English

Descriptors: Nevada; Utah; Idaho; Riparian vegetation;
Livestock; Grazing effects; Aquatic environment; Research
projects

134

NAL Call. No.: aSD11.A42

Riparian vegetation and indigenous southwestern agriculture:
control of erosion, pests, and microclimate.

Nabhan, G.P.

Fort Collins, Colo. : The Station; 1985.

General technical report RM - Rocky Mountain Forest and Range
Experiment Station, United States, Forest Service (120): p.
232-236; 1985. Paper presented at the "Conference on Riparian
Ecosystems and their Management: Reconciling Conflicting
Uses," April 16-18, 1985, Tucson, Arizona. Includes
references.

Language: English

Descriptors: Agriculture; Riparian vegetation; Vegetation
management; Erosion control; Soil fertility; Microclimate;
Climate control; Pest control; Fuelwood

135

NAL Call. No.: HD1775.G4G43

Riparian vegetation as filters of nutrients exported from a
coastal plain agricultural watershed.

Todd, R.; Lowrance, R.; Hendrickson, O.; Asmussen, L.;

Leonard, R.; Fail, J.; Herrick, B.

Athens, Ga. : The Stations; 1983 Dec.

Special publication - University of Georgia, Agriculture
Experiment Stations (23): p. 485-498. ill., maps; 1983 Dec.
Paper presented at a symposium, Sept 21-26, 1980, Athens,
Georgia. Includes references.

Language: English

Descriptors: Georgia; Riparian forests; Nutrients; Filters;
Coastal plains; Watersheds

136

NAL Call. No.: QH105.C2C36

Riparian vegetation planting for flood control.

Chaimson, J.F.

Berkeley : University of California Press; 1984.

California riparian systems : ecology, conservation, and

productive management / edited by Richard E. Warner and Kathleen M. Hendrix. p. 121-123. ill; 1984. Includes references.

Language: English

Descriptors: California; Riparian vegetation; Flood control; Erosion control

137

NAL Call. No.: aSD11.A42

Riparian vegetation reduces stream bank and row crop flood damages. Roseboom, D.; Russell, K.

Fort Collins, Colo. : The Station; 1985.

General technical report RM - Rocky Mountain Forest and Range Experiment Station, United States, Forest Service (120): p. 241-244; 1985. Paper presented at the "Conference on Riparian Ecosystems and their Management: Reconciling Conflicting Uses," April 16-18, 1985, Tucson, Arizona. Includes references.

Language: English

Descriptors: Illinois; Soil and water conservation; Land use; Cropping systems; Erosion; Fishes; Habitats; Riparian vegetation; Stream channels

138

NAL Call. No.: aSD11.U52

Riparian woodlands in jeopardy on northern High Plains.

Boldt, C.E.; Uresk, D.W.; Severson, K.E.

Washington, D.C. : The Service; 1979.

General technical report WO - U.S. Department of Agriculture, Forest Service (12): p. 184-189. ill; 1979. Paper presented at a "Symposium on Strategies for Protection and Management of Floodplain Wetlands and other Riparian Ecosystems," Dec 11-13, 1978, Callaway Gardens, Georgia. Includes references.

Language: English

Descriptors: North Dakota; Woodlands; Riparian vegetation; Rehabilitation; Environmental degradation; Grazing effects

139

NAL Call. No.: SF85.A1R32

Riparian zone inventory.

Braasch, S.; Tanner, G.W.

Denver, Colo. : Society for Range Management; 1989 Jun.

Rangelands v. 11 (3): p. 103-106. ill., maps; 1989 Jun.

Includes references.

Language: English

Descriptors: Colorado; Riparian grasslands; Grassland management; Grazing; Streams; Sediment; Water flow; Plant

succession

140

NAL Call. No.: SF85.A1R32 A

riparian zone--one story.

Bezanson, C.E.; Hughes, L.E.

Denver, Colo. : Society for Range Management; 1989 Apr.

Rangelands v. 11 (2): p. 56-57. ill., maps; 1989 Apr.

Language: English

Descriptors: Arizona; Riparian grasslands; Rotational grazing;
Cattle

141

NAL Call. No.: aSF84.84.N37 1985

Riparian-stream management.

Platt, W.S.

Washington, D.C.? : U.S. Dept. of Agriculture : [U.S. G.P.O.,
1986?]; 1986. National Range Conference, opportunities for the
future : National Range Conference proceedings, Oklahoma City,
Oklahoma, November 6-8, 1985. p. 70-74; 1986.

Language: English

Descriptors: U.S.A.; Riparian vegetation; Range pastures;
Stream conservation; Grazing systems; Rehabilitation;
Watershed management

142

NAL Call. No.: QH105.C2C36

The role of riparian vegetation in channel bank stability:

Carmel River, California.

Kondolf, G.M.; Curry, R.R.

Berkeley : University of California Press; 1984.

California riparian systems : ecology, conservation, and
productive management / edited by Richard E. Warner and
Kathleen M. Hendrix. p. 124-133. ill., maps; 1984. Includes
references.

Language: English

Descriptors: California; Rivers; Riparian vegetation; Erosion
control; Channels; Water table

143

NAL Call. No.: QH105.C2C36

Sacramento River environment: a management plan.

Kraemer, T.J.

Berkeley : University of California Press; 1984.

California riparian systems : ecology, conservation, and
productive management / edited by Richard E. Warner and
Kathleen M. Hendrix. p. 795-799. ill; 1984. Includes

references.

Language: English

Descriptors: California; Riparian forests; Riparian vegetation; Erosion control; Sedimentation

144

NAL Call. No.: 99.8 F7623

Salicaceae family trees in sustainable agroecosystems.
Licht, L.A.

Ottawa : Canadian Institute of Forestry; 1992 Apr.
The Forestry chronicle v. 68 (2): p. 214-217; 1992 Apr. Paper presented at "Contribution of Salicaceae Family to Ameliorating our Environment." Joint Popular Council of Canada/US Popular Council Annual Meeting held Sept. 26-29, 1991, Ottawa, Ontario, Canada. Includes references.

Language: English

Descriptors: Iowa; Salicaceae; Populus; Sustainability; Strip cropping; Groundwater; Water quality; Nitrates; Nitrogen; Nutrient uptake; Ecosystems

Abstract: Research at the University of Iowa is testing the ECOLOTREE BUFFER, a prototype wooded buffer strip planted between a creek and row-cropped land with roots grown intentionally deep enough to intersect the near-surface water table. This project demonstrates that Populus spp. trees cultured by using this technique are both ecologically sustaining and productive. Measured data prove that nitrate is removed from near-surface groundwater and that the nitrogen uptake is present as protein in the leaves and the woody stems. The tree's physiological attributes contribute to a harvested value that can "pay its way"; these include fast wood growth, cut-stem rooting, resprouting from a stump, phreatophytic roots, and a high protein content in the leaves. The wooded riparian strip changes the local agroecosystem by reducing fertilizer nutrients causing surface water eutrophication, by diversifying wildlife habitat, by reducing soils erosion caused by wind and water, by diversifying the crop base, by creating an aesthetic addition in the landscape. This idea is a potential technique for managing non-point source pollutants created by modern farming practices.

145

NAL Call. No.: FICHE 290.9 AM32P

Sediment and phosphorus transport in vegetative filter strips: phase 1, field studies.

Dilaha, T.A.; Sherrard, J.H.; Lee, D.; Mostaghimi, S.; Shanholtz, V.O. St. Joseph, Mich. : The Society; 1985.

Paper - American Society of Agricultural Engineers (Microfiche collection) (fiche no. 85-2043): 12 p.; 1985. Paper presented at the 1985 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The

American Society of Agricultural Engineers, Order Dept., 2950
Niles Road, .

Language: English

Descriptors: Environmental pollution; Pollution by
agriculture; Control methods; Filters

146

NAL Call. No.: 500 AM322A

Should cows chew cheatgrass on commonlands?.

Gillis, A.M.

Washington, D.C. : The Institute; 1991 Nov.

BioScience - American Institute of Biological Sciences v. 41
(10): p. 668-675; 1991 Nov.

Language: English

Descriptors: Arizona; California; Colorado; Idaho; Montana;
Nevada; New Mexico; Oregon; Utah; Washington; Wyoming; Land
management; Range management; Resource conservation; Riparian
grasslands; Grazing intensity; Beef cattle

147

NAL Call. No.: A99.9 F764U

Small mammal populations in a grazed and ungrazed riparian
habitat in Nevada. Medin, D.E.; Clary, W.P.

Ogden, Utah : The Station; 1989 Oct.

Research paper INT - U.S. Department of Agriculture, Forest
Service, Intermountain Research Station (413): 6 p.; 1989 Oct.
Includes references.

Language: English

Descriptors: Nevada; Wildlife; Mammals; Habitats; Riparian
vegetation; Populus tremuloides; Salix; Grazing effects;
Population dynamics

148

NAL Call. No.: aSD11.U52

Soil conservation service and riparian ecosystems: a long-term
view. Barry, V.H. Jr

Washington, D.C. : The Service; 1979.

General technical report WO - U.S. Department of Agriculture,
Forest Service (12): p. 353-358; 1979. Paper presented at a
"Symposium on Strategies for Protection and Management of
Floodplain Wetlands and other Riparian Ecosystems," Dec 11-13,
1978, Callaway Gardens, Georgia.

Language: English

Descriptors: Soil conservation; Resource conservation;
Ecosystems; Usda; Riparian vegetation

149

NAL Call. No.: QH345.B564

Soil N mineralization and nitrification in relation to nitrogen solution chemistry in a small forested watershed.

Hill, A.R.; Shackleton, M.

Dordrecht : Kluwer Academic Publishers; 1989 Sep.

Biogeochemistry v. 8 (2): p. 167-184; 1989 Sep. Includes references.

Language: English

Descriptors: Ontario; Watersheds; Woodlands; Nitrates; Nitrification; Nitrogen mineralization; Riparian forests; Soil water; Upland areas; Ecosystems

150

NAL Call. No.: 60.18 J82

Some responses of riparian soils to grazing management in northeastern Oregon. Bohn, C.C.; Buckhouse, J.C.

Denver, Colo. : Society for Range Management; 1985 Jul.

Journal of range management v. 38 (4): p. 378-381. maps; 1985 Jul. Includes references.

Language: English

Descriptors: Oregon; Riparian forests; Soil water relations; Grazing effects; Soil properties; Range management

151

NAL Call. No.: SD93.A1P5

Stabilization of streambanks and riparian zones by riprap combined with selected vegetative engineering structures.

Costales, E.F. Jr; Costales, A.B.

Laguna : Forest Research Institute; 1985 Jan.

Sylvatrop : the Philippine forest research journal v. 10 (1): p. 17-33; 1985 Jan. Literature review. Includes references.

Language: English

Descriptors: Riparian vegetation; Streams; Soil stabilization; Erosion control; Mulching; Grass strips; Rocks; Revegetation plants

152

NAL Call. No.: 56.8 J822

Steambank stability and cattle grazing in southwestern Montana. Marlow, C.B.; Pogacnik, T.M.; Quinsey, S.D.

Ankeny, Iowa : Soil Conservation Society of America; 1987 Jul.

Journal of soil and water conservation v. 42 (4): p. 291-296; 1987 Jul. Includes references.

Language: English

Descriptors: Montana; Cattle; Grazing effects; Grazing systems; Riparian vegetation; Streams; Stream channels; Stability; Trampling; Erosion; Soil moisture; Stream flow

153

NAL Call. No.: aG4172.U6J5 1979 .U5 Map
Strategy for livestock waste management and streambank grazing control priority area, Upper Sugar River Watershed, Dane County, Wisconsin. United States. Soil Conservation Service Lincoln, Neb. : The Service,; 1980.
1 map : col. ; 44 x 26 cm. 9-12-79. Source: 1974 aerial photography and information from SCS field personnel. Due to inherent aerial photographic displacement, the photographic image may vary from true ground location. Includes location map. 5,0-37,627.1.

Language: English

Descriptors: Animal waste; Environmental aspects; Wisconsin; Upper Sugar River Watershed; Maps; Grazing; Environmental aspects; Wisconsin; Upper Sugar River Watershed; Maps; Range management; Wisconsin; Wisconsin; Upper Sugar River Watershed; Maps

154

NAL Call. No.: FICHE S-72
Stream corridor management--a response to streambank erosion. Studer, L.L.; Keep, T.A.
St. Joseph, Mich. : The Society; 1988.
American Society of Agricultural Engineers (Microfiche collection) (fiche no. 88-2024): 7 p.; 1988. Paper presented at the 1988 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices.

Language: English

Descriptors: Missouri; Stream erosion; Control methods; Local planning

155

NAL Call. No.: 292.8 W295
Streambank erosion along two rivers in Iowa. Odgaard, A.J.
Washington, D.C. : American Geophysical Union; 1987 Jul.
Water resources research v. 23 (7): p. 1225-1236. ill., maps; 1987 Jul. Includes references.

Language: English

Descriptors: Iowa; Rivers; Erosion; Channels; Flow; Sediment pollution

156

NAL Call. No.: 1 Ag84C no.837

Streambank erosion control on the Winooski River, Vermont.
Edminster, Frank C.; Atkinson, Walter S.,_1905-; McIntyre,
Arthur Clifton, Washington, D.C. : U.S. Dept. of Agriculture,;
1949.

54 p. : ill., charts, maps, plans ; 23 cm. (Circular / United
States Department of Agriculture ; no. 837). Cover title.

Language: English; English

Descriptors: Soil conservation; Vermont; Streambank planting;
Vermont

157

NAL Call. No.: 290.9 AM32P

Streambank erosion due to bed degradation.

Alonso, C.V.; Combs, S.T.

St. Joseph, Mich. : The Society; 1989.

Paper - American Society of Agricultural Engineers (89-2108):
21 p.; 1989. Paper presented at the "1989 International Summer
Meeting jointly sponsored by the American Society of
Agricultural Engineers and the Canadian Society of
Agricultural Engineering," June 25-28, Quebec, PQ, Canada.
Includes references.

Language: English

Descriptors: Stream erosion; Stream flow; Simulation models

158

NAL Call. No.: 290.9 AM32T

Streambank erosion due to bed degradation--a model concept.

Alonso, C.V.; Combs, S.T.

St. Joseph, Mich. : American Society of Agricultural

Engineers; 1990 Jul. Transactions of the ASAE v. 33 (4): p.
1239-1248. ill; 1990 Jul. Includes references.

Language: English

Descriptors: Stream erosion; Models

Abstract: Processes of fluvial erosion which operate on the
banks of alluvial streams are examined by considering
mechanisms of bed and bank erosion and mass failure of
drained, homogeneous, cohesive banks. These concepts are used
to formulate a mathematical model to evaluate bed degradation
for the case in which bed lowering causes bank instability.
Application of the model to a laboratory experiment verifies
the behavior of the bed degradation submodel. Analysis of a
more complex scenario demonstrates the importance of
considering streambank erosion in streambed degradation
analyses.

159

NAL Call. No.: 1.98 AG84

Streambank plants vital to water quality.

Sherman, H.

Washington, D.C. : The Administration; 1989 Aug.

Agricultural research - U.S. Department of Agriculture,
Agricultural Research Service v. 37 (8): p. 19; 1989 Aug.

Language: English

Descriptors: Stream erosion; Sediments; River bank protection;
Revegetation; Erosion control

160

NAL Call. No.: 56.8 J822

Streambank stability and cattle grazing in southwestern
Montana: a response to the viewpoint.

Marlow, C.B.

Ankeny, Iowa : Soil Conservation Society of America; 1988 Mar.

Journal of soil and water conservation v. 43 (2): p. 206-207;
1988 Mar. Includes references.

Language: English

Descriptors: Montana; Cattle; Soil conservation; Grazing
effects; Stream erosion; Banks; Stream flow

161

NAL Call. No.: 56.8 J822

Streambank stability and cattle grazing in southwestern
Montana: a viewpoint. Renard, K.G.

Ankeny, Iowa : Soil Conservation Society of America; 1988 Mar.

Journal of soil and water conservation v. 43 (2): p. 204-206;
1988 Mar. Includes references.

Language: English

Descriptors: Montana; Cattle; Soil conservation; Grazing
effects; Stream erosion; Banks; Stream flow

162

NAL Call. No.: QH105.C2C36

Streambank stabilization techniques used by the Soil
Conservation Service in California.

Patterson, D.W.; Finch, C.U.; Wilcox, G.I.

Berkeley : University of California Press; 1984.

California riparian systems : ecology, conservation, and
productive management / edited by Richard E. Warner and
Kathleen M. Hendrix. p. 452-458. ill; 1984. Includes
references.

Language: English

Descriptors: California; Streams; Soil and water conservation;
Soil stabilization; Vegetation

163

NAL Call. No.: SF85.A1R32

Streamside and upland vegetation use by cattle.

Platts, W.S.; Nelson, R.L.

Denver, Colo. : Society for Range Management; 1985 Feb.

Rangelands v. 7 (1): p. 5-7. ill., maps; 1985 Feb. Includes 1
references.

Language: English

Descriptors: Idaho; Utah; Nevada; Upland areas; Riparian
vegetation; Cattle; Grazing systems; Range management; Study
sites

164

NAL Call. No.: QH1.J62

Stress and disturbance: vegetation dynamics in the dry Chaco
region of Argentina.

Adamoli, J.; Sennhauser, E.; Acero, J.M.; Rescia, A.

Oxford : Blackwell Scientific Publications; 1990 Jul.

Journal of biogeography v. 17 (4/5): p. 491-500. ill; 1990

Jul. Includes references.

Language: English

Descriptors: Argentina; Savannas; Ecosystems; Grazing effects;
Plant communities; Riparian forests; Rivers; Vegetation types

165

NAL Call. No.: QH540.E288

The study of stream ecosystems: a functional view.

Cummins, K.W.

New York, N.Y. : Springer-Verlag; 1988.

Ecological studies : analysis and synthesis v. 67: p. 247-262.

ill; 1988. In the series analytic: Concepts of ecosystem

ecology: a comparative view / edited by L.R. Pomeroy and J.J.

Alberts.

Language: English

Descriptors: Streams; Inland water environment; Freshwater
ecology; Detritivores; Nutrient cycles; Ecosystems;
Invertebrates; Riparian vegetation

166

NAL Call. No.: SF85.A1R32

Successful range management in the McCoy Gulch Riparian

Demonstration Area. Grette, T.

Denver, Colo. : Society for Range Management; 1992 Dec.

Rangelands v. 12 (6): p. 305-307; 1992 Dec. Includes references.

Language: English

Descriptors: Colorado; Rangelands; Range management; Riparian grasslands

167

NAL Call. No.: SB476.G7

Taming streambank erosion.

Stroud, T.

Overland Park, Kan. : Intertec Publishing Corporation; 1987

Sep. Grounds maintenance v. 22 (9): p. 12, 14, 18, 20, 22, 76, 78. ill; 1987 Sep.

Language: English

Descriptors: Stream erosion; Protection; Control methods

168

NAL Call. No.: 412.9 N814

Texas creek riparian enhancement study.

Prichard, D.E.; Upham, L.L.

Washington, D.C. : Wildlife Management Institute; 1986.

Transactions of the ... North American Wildlife and Natural Resources Conference (51st): p. 298-303. maps; 1986. Includes references.

Language: English

Descriptors: Texas; Environmental impact reporting; Grazing effects; Habitat destruction; Habitat improvement; Livestock; River bank protection; *Salmo trutta*; Streams

169

NAL Call. No.: aSD11.A42

Time of grazing and cattle-induced damage to streambanks.

Marlow, C.B.; Pogacnik, T.M.

Fort Collins, Colo. : The Station; 1985.

General technical report RM - Rocky Mountain Forest and Range Experiment Station, United States, Forest Service (120): p.

279-284. ill; 1985. Paper presented at the "Conference on

Riparian Ecosystems and their Management: Reconciling Conflicting Uses," April 16-18, 1985, Tucson, Arizona.

Includes references.

Language: English

Descriptors: Streams; Cattle; Grazing effects; Erosion; Erosion control; Controlled grazing; Seasons

170

NAL Call. No.: aSD11.A42

Trout habitat, abundance, and fishing opportunities in fenced vs unfenced riparian habitat along Sheep Creek, Colorado.

Stuber, R.J.

Fort Collins, Colo. : The Station; 1985.

General technical report RM - Rocky Mountain Forest and Range Experiment Station, United States, Forest Service (120): p. 310-314; 1985. Paper presented at the "Conference on Riparian Ecosystems and their Management: Reconciling Conflicting Uses," April 16-18, 1985, Tucson, Arizona. Includes references.

Language: English

Descriptors: Colorado; Streams; Riparian vegetation; Grazing effects; Recreations; Fishes; Habitats; Controlled grazing

171

NAL Call. No.: aSD11.A42

The use of cattle as a management tool for wildlife in shrub-willow riparian systems.

Krueger, H.O.; Anderson, S.H.

Fort Collins, Colo. : The Station; 1985.

General technical report RM - Rocky Mountain Forest and Range Experiment Station, United States, Forest Service (120): p. 300-304. ill; 1985. Paper presented at the "Conference on Riparian Ecosystems and their Management: Reconciling Conflicting Uses," April 16-18, 1985, Tucson, Arizona. Includes references.

Language: English

Descriptors: Cattle; Grazing; Wildlife; Habitats; Resource management

172

NAL Call. No.: TD201.V57 no.151 etc.

Use of vegetative filter strips to minimize sediment and phosphorus losses from feedlots. phase 1. Experimental plot studies.

Dillaha, T. A.

Virginia Water Resources Research Center

Blacksburg, Va. : Virginia Water Resources Research Center, Virginia Polytechnic Institute and State University, ; 1986-9999.

v. : ill, 1 form ; 23 cm.. (Bulletin / Virginia Water Resources Research Center, Virginia Polytechnic Institute and State University ; 151, etc.). Financed in part by U.S. Dept. of Interior, as authorized by the Water Resources Research Act of 1984. Project S-010. April 1986. Bibliography: p. 67-68.

Language: English

Descriptors: Feedlot runoff; Animal waste

173

NAL Call. No.: 56.8 J822

Using CREAMS to simulate filter strip effectiveness in erosion control. Williams, R.D.; Nicks, A.D.

Ankeny, Iowa : Soil Conservation Society of America; 1988 Jan. Journal of soil and water conservation v. 43 (1): p. 108-112; 1988 Jan. Includes references.

Language: English

Descriptors: Oklahoma; Erosion control; Simulation models; Filtration; Grass strips; Agricultural land; Watersheds; Runoff water

174

NAL Call. No.: 290.9 AM32T

Using the CREAMS model to estimate the effect of diversions on soil loss. Line, D.E.; Meyer, L.D.

St. Joseph, Mich. : American Society of Agricultural Engineers; 1988 Oct. Transactions of the ASAE v. 31 (5): p. 1430-1434. ill; 1988 Oct. Includes references.

Language: English

Descriptors: Erosion control; Models; Grass strips; Sloping land

175

NAL Call. No.: aSD433.A53

Value of forested wetlands as filters for sediments and nutrients. Kuenzler, E.J.

Asheville, N.C. : The Station; 1989 Jan.

General technical report SE - U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station (50): p. 85-96. ill; 1989 Jan. Paper presented at a "Symposium on the Forested Wetlands of the Southern United States," July 12-14, 1988, Orlando, Florida.

Language: English

Descriptors: South eastern states of U.S.A.; Wetlands; Forests; Sediments; Nutrients; Runoff water; Pollution; Pollutants; Nitrogen; Phosphorus; Riparian vegetation

176

NAL Call. No.: 292.9 AM34

Variation of stream stability with stream type and livestock bank damage in northern Nevada.

Myers, T.J.; Swanson, S.

Bethesda, Md. : American Water Resources Association; 1992 Jul. Water resources bulletin v. 28 (4): p. 743-754; 1992 Jul. Includes references.

Language: English

Descriptors: Nevada; Streams; Stability; Livestock; Grazing effects; Riparian vegetation; Riverbank protection

Abstract: Many natural and anthropogenic factors contribute to the stability or erodibility of stream channels. Although a stream rating procedure used by more than 60 percent of the U.S. National Forests provides an estimate overall stability, it does not identify the cause of instability or indicate corrective management. To better sort natural from livestock influences, stream stability rating indicator variables were related to stream types and levels of ungulate bank damage in a large data base for streams in northern Nevada. Stability and the range in stability varied naturally with stream type. Ungulate bank damage had different effects on different stream types and on different parts of their cross-sections. Vegetation is more important for stability on certain stream types than on other types. Streams with noncohesive sand and gravel banks are most sensitive to livestock grazing. Range managers should consider the stream type when setting local standards, writing management objectives, or determining riparian grazing strategies.

177

NAL Call. No.: TD428.A37V4

Vegetated filter strips for agricultural runoff treatment. Magette, W. L.

United States, Environmental Protection Agency, Chesapeake Bay Program Philadelphia, PA : Region III, U.S. Environmental Protection Agency, ; 1987. xv, 125 p. : ill. ; 28 cm. (CBP/TRS ; 2/87). February 1987. Assistance no. X-003314-01. "August 1987."--Cover. "Chesapeake Bay Program."--Cover. Bibliography: p. 39-41.

Language: English

Descriptors: Agricultural pollution; Water; Sediment transport; Feedlot runoff

178

NAL Call. No.: FICHE S-72

Vegetated filter strips for nonpoint source pollution control. Magette, W.L.; Brinsfield, R.B.; Palmer, R.E.; Wood, J.D. St. Joseph, Mich. : The Society; 1986.

American Society of Agricultural Engineers (Microfiche collection) (fiche no. 86-2024): 16 p. maps; 1986. Paper presented at the 1986 Summer Meeting of the American Society of Agricultural Engineers. Available for purchase from: The American Society of Agricultural Engineers, Order Dept., 2950 Niles Road, St. Joseph, Michigan 49085. Telephone the Order Dept. at (616) 429-0300 for information and prices. Includes references.

Language: English

Descriptors: Pollution by agriculture; Control methods;
Vegetation; Filters; Runoff collection; Nutrient retention;
Sediments

179

NAL Call. No.: 290.9 AM32T

Vegetative filter strips for agricultural nonpoint source
pollution control. Dillaha, T.A.; Reneau, R.B.; Mostaghimi,
S.; Lee, D.

St. Joseph, Mich. : American Society of Agricultural
Engineers; 1989 Mar. Transactions of the ASAE v. 32 (2): p.
513-519. ill; 1989 Mar. Includes references.

Language: English

Descriptors: Grass strips; Dactylis glomerata; Pollution by
agriculture; Erosion control; Water erosion; Rainfall
simulators

180

NAL Call. No.: aS627.S8V4

Vegetative measures for streambank stabilization case studies
from Illinois and Missouri.

United States, State and Private Forestry, Northeastern Area
St. Paul, MN : U.S. Dept. of Agriculture, Forest Service,
Northeastern Area, State & Private Forestry,; 1991.

1 folded sheet (6 p.) : ill. ; 23 cm. Cover title.

Language: English

Descriptors: Streambank planting; Stream conservation

181

NAL Call. No.: SF85.A1R32

Whitehorse Butte allotment--controversy to compromise.
Holbert, M.R.

Denver, Colo. : Society for Range Management; 1991 Jun.
Rangelands v. 13 (3): p. 125-128; 1991 Jun. Includes
references.

Language: English

Descriptors: Oregon; Range management; Overgrazing; Riparian
vegetation; Grazing systems; Semiarid climate

182

NAL Call. No.: SF85.A1R32

Will the riparian pasture build good streams?.

Platts, W.S.; Nelson, R.L.

Denver, Colo. : Society for Range Management; 1985 Feb.
Rangelands v. 7 (1): p. 7-10. ill; 1985 Feb. Includes
references.

Language: English

Descriptors: Range management; Riparian vegetation; Livestock;
Grazing systems

183

NAL Call. No.: 60.18 J82

Willow planting success as influenced by site factors and
cattle grazing in northeastern California.

Conroy, S.D.; Svejcar, T.J.

Denver, Colo. : Society for Range Management; 1991 Jan.

Journal of range management v. 44 (1): p. 59-63; 1991 Jan.

Includes references.

Language: English

Descriptors: California; Cattle; Salix; Crop establishment;
Shoot cuttings; Riparian vegetation; Grazing effects; Grazing
intensity; Survival; Plant communities; Soil water content;
Water table; Site factors

184

NAL Call. No.: GB565.W8W9 1986

Wyoming's challenge in riparian habitat management.

Busby, F.

Laramie, Wyo. : The Center; 1986.

Wyoming Water 1986 and Streamside Zone Conference :
proceedings : Wyoming's water doesn't wait while we debate :
Casper, Wyoming, April 28-30, 1986 / sponsored by Wyoming
Water Res Cent [and] UW Agric Ext Serv, Univ of WY. p. 23;
1986.

Language: English

Descriptors: Wyoming; Ecosystems; Habitat improvement;
Livestock; Grazing lands; Riparian vegetation; Multiple use;
Animal husbandry

185

NAL Call. No.: SF85.A1R32

Wyoming's land managers.

Schwartz, J.

Denver, Colo. : Society for Range Management; 1991 Feb.

Rangelands v. 13 (1): p. 24-25; 1991 Feb.

Language: English

Descriptors: Wyoming; Range management; Wildlife management;
Water availability; Riparian vegetation

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S1	1009	RIPARIAN OR STREAMBANK? ? OR (BUFFER OR FILTER OR GRASS OR VEGETATED)()STRIP? ?
S2	847	S1/TI,DE,ID
S3	102627	SH=(F120 OR F130 OR J600 OR J800 OR L100)
S4	1284	AGRICULTURAL()(RUNOFF OR CHEMICAL? ? OR NONPOINT(2N)POLLUTION OR BEST()MANAGEMENT()PRACTICE? ? OR BMP? ?)
S5	220735	LIVESTOCK OR COW? ? OR CATTLE OR GRAZING OR PASTURE? ? OR RANGE()MANAGEMENT OR FIELD? ? OR CROPLAND
S6	110572	AGRICHEMICAL? ? OR ATRAZINE OR ALACHLOR OR METOLACHLOR OR FERTILIS? OR FERTILIZ? OR PHOSPHORUS OR PHOSPHATE? ? OR NITROGEN OR NITRATE? ? OR NUTRIENT? ?
S7	195755	S4/TI,DE,ID OR S5/TI,DE,ID OR S6/TI,DE,ID

S8 243 S2 AND (S3 OR S7)

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NAL'S DOCUMENT DELIVERY SERVICE INFORMATION FOR THE LIBRARY

The following information is provided to assist your librarian in obtaining the required materials.

LOAN SERVICE -- Materials in NAL's collection are loaned only to

other U.S. libraries. Requests for loans are made through local public, academic, or special libraries.

The following materials are not available for loan: serials (except USDA serials); rare, reference, and reserve books; microforms; and proceedings of conferences or symposia. Photocopy or microform of non-circulating publications may be purchased as described below.

DOCUMENT DELIVERY SERVICE -- Photocopies of articles are available for a fee. Make requests through local public, academic, or special libraries. The library will submit a separate interlibrary loan form for each article or item requested. If the citation is from an NAL database (CAIN/AGRICOLA, "Bibliography of Agriculture," or the NAL Catalog) and the call number is given, put that call number in the proper block on the request form. Willingness to pay charges must be indicated on the form. Include compliance with copyright law or a statement that the article is for "research purposes only" on the interlibrary loan form or letter. Requests cannot be processed without these statements. Please read copyright notice below.

CHARGES:

- * Photocopy, hard copy of microfilm and microfiche - \$5.00 for the first 10 pages or fraction copied from a single article or publication. \$3.00 for each additional 10 pages or fraction.
- * Duplication of NAL-owned microfilm - \$10.00 per reel.
- * Duplication of NAL-owned microfiche - \$ 5.00 for the first fiche and \$.50 for each additional fiche per title.

BILLING -- Charges include postage and handling, and are subject to change. Invoices are issued quarterly by the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161. Establishing a deposit account with NTIS is encouraged.

DO NOT SEND PREPAYMENT.

SEND REQUESTS TO:

USDA, National Agricultural Library
Document Delivery Services Branch, PhotoLab
10301 Baltimore Blvd., NAL Bldg.
Beltsville, Maryland 20705-2351

Contact the Head, Document Delivery Services Branch in writing or by calling (301) 504-5755 with questions or comments about this policy.

- 2) DOCUMENT DELIVERY SERVICES AVAILABLE TO LIBRARIES, OTHER INFORMATION CENTERS AND COMMERCIAL ORGANIZATIONS.

The National Agricultural Library (NAL) accepts requests from libraries and other organizations in accordance with the national and international interlibrary loan code and guidelines. In its national role, NAL supplies copies of agricultural materials not found elsewhere. Filling requests for materials readily available from other sources diverts NAL's resources and diminishes its ability to serve as a national source for agricultural and agriculturally related materials. Therefore, NAL is viewed as a library of last resort.

Submit requests to state/region/network sources prior to sending to NAL. Within the United States, possible sources are public libraries, land-grant university libraries or other large research libraries within a state. In other countries submit requests to major university, national or provincial institutions. If the needed publications are not available from these sources, submit requests to NAL with a statement indicating their non-availability.

REQUESTS -- Submit on the American Library Association (ALA) or the International Federation of Library Associations and Institutions (IFLA) interlibrary loan form or via electronic mail or telefacsimile (see over for more details). Include the complete name of the person authorizing the request on each form; the standard bibliographic source which lists the title as owned by NAL; and the call number if the citation is from an NAL database (CAIN/AGRICOLA, "Bibliography of Agriculture," or the NAL catalog).

LOAN SERVICE -- Materials in the NAL collection are loaned only to U.S. libraries. The loan period is one month.

The following materials are not available for loan: serials (except for USDA serials); rare, reference, and reserve books; microforms; and proceedings of conferences or symposia. Photocopy or microform of the non-circulating publications is supplied automatically (as described below) when the requesting organization indicates that photocopy is acceptable on the loan form.

AUDIOVISUALS (AVs) -- Order at least 3-4 weeks before the intended show date. Give show date and alternate show date when requesting specific titles. Request specific format needed if more than one format is given in the citation.

DOCUMENT DELIVERY SERVICE -- Submit a separate completed interlibrary loan form for each article required. Indicate willingness to pay charges on the form and compliance with copyright law or include a statement that the article is for "research purposes only." Requests are not processed without these statements. Please read copyright notice below.

CHARGES:

* Photocopy, hard copy of microfilm and microfiche - \$5.00 for the first 10 pages or fraction copied from a single article

or publication. \$3.00 for each additional 10 pages or fraction.

- * Duplication of NAL-owned microfilm - \$10.00 per reel.
- * Duplication of NAL-owned microfiche - \$5.00 for the first fiche and \$.50 for each additional fiche per title.

BILLING - Charges include postage and handling, and are subject to change. Invoices are issued quarterly by the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161. Establishing a deposit account with NTIS is encouraged. DO NOT SEND PREPAYMENT.

Send Requests to:

USDA, National Agricultural Library
Document Delivery Services Branch, ILL, PhotoLab
10301 Baltimore Blvd., NAL Bldg.
Beltsville, Maryland 20705-2351

Contact the Head, Document Delivery Services Branch in writing or by calling (301) 504-5755 with questions or comments about this policy.

3) DOCUMENT DELIVERY SERVICES AVAILABLE TO FOREIGN LIBRARIES, INFORMATION CENTERS AND COMMERCIAL ORGANIZATIONS.

The National Agricultural Library (NAL) accepts requests from libraries and other organizations in accordance with the national and international interlibrary loan code and guidelines.

In its national role, NAL supplies copies of agricultural materials not found elsewhere. Filling requests for materials readily available from other sources diverts NAL's resources and diminishes its ability to serve as a national source for agricultural and agriculturally related materials. Therefore, NAL is viewed as a library of last resort.

Submit requests to major university libraries, national or provincial institutions or network sources prior to sending requests to NAL. If the needed publications are not available from these sources, submit requests to NAL with a statement indicating their non-availability.

AGLINET -- Requesters in countries with an AGLINET library are encouraged to make full use of that library and its networking capabilities. As an AGLINET participant, NAL provides free document delivery service for materials published in the United States to other AGLINET participants.

REQUESTS -- Submit requests on the American Library Association (ALA) or the International Federation of Library Associations and Institutions (IFLA) interlibrary loan form or via electronic mail or telefacsimile (see over for more details). Include the complete name of the person authorizing the request on each form; the standard bibliographic source which lists the title as owned

by NAL; and the call number if the citation is from an NAL database(CAIN/AGRICOLA, "Bibliography of Agriculture", or the NAL catalog).

DOCUMENT DELIVERY SERVICE -- Submit a separate completed interlibrary loan form for each article requested. Indicate willingness to pay charges on the form, and compliance with copyright law or include a statement that the article is for "research purposes only". Requests cannot be processed without these statements. Please read copyright notice below.

CHARGES:

- * Photocopy, hard copy of microfilm and microfiche - \$5.00 for the first 10 pages or fraction copied from a single article or publication. \$3.00 for each additional 10 pages or fraction.
- * Duplication of NAL-owned microfilm - \$10.00 per reel.
- * Duplication of NAL-owned microfiche - \$5.00 for the first fiche and \$.50 for each additional fiche per title.

BILLING - Charges include postage and handling, and are subject to change. Invoices are issued quarterly by the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161. Establishing deposit account with NTIS is encouraged. Annual billing is available to foreign institutions on request by contacting NAL at the address below. DO NOT SEND PREPAYMENT.

Send Requests to:

USDA, National Agricultural Library
Document Delivery Services Branch, ILL, PhotoLab
10301 Baltimore Blvd., NAL Bldg.
Beltsville, Maryland 20705-2351

Contact the Head, Document Delivery Services Branch at (301) 504-5755 with questions or comments about this policy.

ELECTRONIC MAIL ACCESS FOR INTERLIBRARY LOAN (ILL) REQUESTS

June 1993

The National Agricultural Library (NAL), Document Delivery Services Branch accepts ILL requests from libraries via several electronic services. All requests must comply with established routing and referral policies and procedures. The transmitting library will pay all fees incurred during the creation of requests and communication with NAL. A sample format for ILL requests is printed below along with a list of the required data/format elements.

ELECTRONIC MAIL - (Sample form below)

SYSTEM	ADDRESS CODE
INTERNET.	LENDING@NALUSDA.GOV
EASYLINK.	62031265
ONTYME.	NAL/LB
TWX/TELEX	Number is 710-828-0506 NAL LEND. This number may only be used for ILL requests.
FTS2000	A12NALLEND
OCLC	NAL's symbol AGL need only be entered once, but it must be the last entry in the Lender string. Requests from USDA and Federal libraries may contain AGL anywhere in the Lender String.

SAMPLE ELECTRONIC MAIL REQUEST

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AG University/NAL      ILLRQ 231      4/1/93      NEED BY:  6/1/93

Interlibrary Loan Department
Agriculture University
Heartland, IA  56789

Dr. Smith  Faculty  Ag School

Canadian Journal of Soil Science 1988 v 68(1):  17-27
DeJong, R.  Comparison of two soil-water models under
semi-arid growing conditions

Ver:  AGRICOLA

Remarks:  Not available at IU or in region.

NAL CA:  56.8 C162

Auth:  C. Johnson      CCL      Maxcost:  $15.00

MORE
=====

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TELEFACSIMILE - Telephone number is 301-504-5675. NAL accepts ILL requests via telefacsimile. Requests should be created on standard ILL forms and then faxed to NAL. NAL does requests via Fax at this time.

REQUIRED DATA ELEMENTS/FORMAT

1. Borrower's address must be in block format with at least two blank lines above and below so form may be used in window envelopes.
2. Provide complete citation including verification, etc.
3. Provide authorizing official's name (request will be rejected if not included).
4. Include statement of copyright compliance if applicable. Please read copyright notice below.
5. Indicate willingness to pay applicable charges.
6. Include NAL call number if available. Contact the Document Delivery Services Branch at (301) 504-6503 if additional information is required.

Photocopy Warning:

NOTICE WARNING CONCERNING COPYRIGHT RESTRICTIONS

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted material.

Under certain conditions specified in the law, libraries and archives are authorized to furnish a photocopy or other reproduction. One of these specific conditions is that the photocopy or reproduction is not to be "used for any purpose other than private study, scholarship, or research." If a user makes a request for, or later uses, a photocopy or reproduction for purposes in excess of "fair use," that user may be liable for copyright infringement.

This institution reserves the right to refuse to accept a copying order if, in its judgement, fulfillment of the order would involve violation of copyright law.

37 C.F.R. '201.14

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D.C. 20250, or call (202) 720-7327 (voice) or (202) 720-1127 (TDD).
USDA is an equal employment opportunity employer.

Return to Bibliographies

Return to the Water Quality Information Center at the National Agricultural Library.

Last update: April 27, 1998

The URL of this page is <http://www.nal.usda.gov/wqic/Bibliographies/qb9332.html>

J. R. Makuch /USDA-ARS-NAL-WQIC/ jmakuch@nal.usda.gov

Disclaimers

[U.S. Department of Agriculture (USDA)] [Agricultural Research Service (ARS)] [National Agricultural Library
(NAL)]