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Constructed Wetlands Bibliography, Part V: Household Waste

This file, "Constructed Wetlands Bibliography, Part V: Household Waste" is one section of a seven-part constructed wetlands bibliography on using constructed wetlands for wastewater treatment. The bibliography was compiled by United States Department of Agriculture staff from the Ecological Sciences Division of the Natural Resources Conservation Service and the Water Quality Information Center at the National Agricultural Library. The complete bibliography can be accessed as either a single large (450K) file containing more than 600 citations or in parts organized by topic.

To locate a publication cited in this bibliography, please contact your local, state, or university library. If you are unable to locate a particular publication, your library can contact the National Agricultural Library (see instructions given at the end of this file).

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http://www.nal.usda.gov/wqic/Constructed_Wetlands_all/index.html.

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HW
CATEGORY HW
SUBCATEGOR

TITLE A new community approach to waste treatment with higher water plants.
AUTHOR Burka, U. and P.C. Lawrence.
SOURCE Constructed Wetlands in Water Pollution Control.
PUBLISHER Pergamon Press, Inc.
PAGES pp. 359-371
DATE 1990
CALLNUM TD 756. 5 I57
ANNOTATION The success of the two sewage treatment systems based on aquatic plants has attracted the attention of the industry, and communities. The industry has been impressed by the systems' performances while communities are impressed by a treatment

systems' efficiency and aesthetics that can be an attractive community amenity.

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CATEGORY HW
SUBCATEGOR

TITLE An assessment of using artificial wetlands to treat sewage.
AUTHOR Fisher, P.J.
SOURCE Proceedings of the 13th annual federal convention,
PUBLISHER Canberra, Australia, 1989. p. 21-31.
PAGES
DATE
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Constructed wetlands for municipal wastewater treatment.
AUTHOR Watson, J.T., G.R. Steiner and D.A. Hammer.
SOURCE Proceedings, Mississippi Water Resources Conference,
PUBLISHER
PAGES
DATE 1988
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Constructed wetlands for municipal wastewater treatment: prepared for presentation at the Miss. Water Resources Conf., Jackson, MS, March 29-30, 1988.
AUTHOR Steiner, G.R., J.T. Watson and D.A. Hammer.
SOURCE
PUBLISHER Chattanooga, TN: Tenn. Valley Authority, Office of Natural Resources and Economic Development.
PAGES 12p
DATE 1988?
CALLNUM DNAL TD755.S7
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Constructed wetlands for municipal wastewater treatment: state-of-the-art.
AUTHOR Watson, J.T.
SOURCE Presented at the Sym. Epuration Des Eaux Usees Par Les Plants: Perspectives D'Avenir Au Quebec, Montreal, Quebec, Canada, March 20, 1992.
PUBLISHER
PAGES
DATE 1992
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Constructed wetlands in effluent disposal.
AUTHOR Sfackney, B.J.
SOURCE Sixth National Local Government Engineering Conference, Hobart, Australia, August 25-30, 1991.
PUBLISHER Barton, Australia: IE
PAGES pp 179-83.
DATE 1991.
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Constructed wetlands in effluent disposal.
AUTHOR Mackney, B.J.
SOURCE Effective Management of Assests and Environment National Conference Publication - Institution of Engineers, Australia n 91 pt 14.
PUBLISHER Barton, Australia: IE Aust.
PAGES pp. 179-183
DATE 1991
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Constructed wetlands: a viable alternative to sewage treatment plants?
AUTHOR Groark, E.
SOURCE Splash! [A newsletter of the Save Our Streams program] 10(2)
PUBLISHER Izaak Walton League of America
PAGES p. 3

DATE 1990, Spring
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Domestic wastewater treatment in tanks planted with rooted macrophytes, case study, description of system, design criteria, efficiency.
AUTHOR Boutin, C.
SOURCE Post-Conference IAWPRC. Piracicaba, Brazil, 24-27 August 1986. Wat. Sci. Tech., 19 (12), pp 29-40
PUBLISHER
PAGES
DATE 1986
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Ecological considerations in wetlands treatment of municipal wastewaters.
AUTHOR Godfrey, P.J., et al., eds.
SOURCE
PUBLISHER New York: Van Rostrand Reinhold
PAGES
DATE 1985
CALLNUM QH545. S49E3
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Environmental protection agency municipal wastewater treatment technology forum, Orlando, Florida, March 20-22 1990.
AUTHOR Environmental Protection Agency.
SOURCE
PUBLISHER Washington: EPA
PAGES
DATE 1990
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Etude experimentale de traitement des eaux usees par des lagunes facultatives et a hydrophytes libres au Niger. (Experimentation of wastewater treatment in facultative pond and lagoons with floating macrophytes in Niger)
AUTHOR Laouali, Garba et al
SOURCE Water Quality Research Journal Canada, Vol. 31, No.1
PUBLISHER
PAGES 37-50
DATE 1996
CALLNUM
ANNOTATION The article is in French, with an English abstract.

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CATEGORY HW
SUBCATEGOR

TITLE Gas exchange through the soil-atmosphere interphase and through dead culms of Phragmites australis in a constructed reed bed receiving domestic sewage.
AUTHOR Brix, H.
SOURCE Water Research. 1990. v. 24 p. 259-266.
PUBLISHER
PAGES
DATE 1990
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE General design, construction, and operation guidelines: constructed wetlands wastewater treatment systems for small users including individual residences.
AUTHOR Steiner, G.R., J.T. Watson and K.D. Choate.
SOURCE Tennessee Valley Authority, Chattanooga. Aquatic Biology Dept. Report: TVA/WR/WQ-91/2.
PUBLISHER NTIS Accession No. DE91015968XAB
PAGES
DATE 1991, March
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Inland marshes are saving dollars.
AUTHOR Birmingham, T.H.

SOURCE Public Works, Vol. 119, No.12
PUBLISHER
PAGES pp. 50-52
DATE 1988
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Innovative solutions to small community wastewater problems.
AUTHOR Schutz, F.P.
SOURCE Operations Forum: Water Environment Federation Vol. 9, No. 6, p 12-15, 1992
PUBLISHER
PAGES pp 12-15
DATE 1992
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Inventory of constructed wetlands for municipal wastewater treatment in the U.S.
AUTHOR Brown, D.S. and S.C. Reed.
SOURCE Pub. in Proc., ASCE Nat. Env. Eng Conference. Report No. EPA/600/D-91/087; NTIS Accession No. PB91-191247/XAB.
PUBLISHER
PAGES
DATE 1991, July
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Natural sewage recycling systems.
AUTHOR Small, M.M.
SOURCE Brookhaven National Laboratory BNL-50630
PUBLISHER NTIS BNL-50630
PAGES 36p.
DATE 1977
CALLNUM
ANNOTATION This paper presents a review of the development of the natural treatment systems, Marsh/Pond and Meadow/Marsh/Pond, which produces potable water from sewage. No conventional treatment plant hardware beyond aeration was used. Experiments for the

two prototype systems are described and performance data are presented in detail for the Marsh/Pond systems.

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CATEGORY HW
SUBCATEGOR

TITLE Needs and problems in sewage treatment and effluent disposal facing small communities: the role of wetland treatment alternatives.
AUTHOR Bastian, R.K.
SOURCE Transactions of the Kentucky Academy of Sciences. 52(1/2): 41-49.
PUBLISHER
PAGES
DATE 1991, March
CALLNUM 500 K41
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE On-site alternatives for treatment and disposal.
AUTHOR Pause, S.M.
SOURCE Journal-Water Pollution Control Federation, Vol.61, No. 6
PUBLISHER
PAGES pp. 844-845
DATE 1989, June
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Performance of solid-matrix wetland systems, viewed as fixed-film bioreactors.
AUTHOR Bavor, H.J., et al.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural.
PUBLISHER Chelsea, MI: Lewis Publishers, Inc.
PAGES pp. 646-656
DATE 1989
CALLNUM TD 756. 5 C66
ANNOTATION Wastewater treatment of solid-matrix constructed wetland systems has been investigated during the design, operation, and maintenance of seven large-scale units. Removal of suspended solids, biochemical oxygen demand, nitrogen, phosphorus, and fecal coliforms were investigated with respect to loading, detention time, and temperature parameters to allow predictive modeling of the system performance.

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CATEGORY HW
SUBCATEGOR

TITLE Potential replacement of septic tank drain fields by artificial marsh wastewater treatment systems.
AUTHOR Fetter, C.W., W.E. Sloey, and F.L. Spangler.
SOURCE Ground-water. 1976. v. 14 p. 396-402.
PUBLISHER
PAGES
DATE 1976
CALLNUM TD 403 G7
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Removal of nutrients from treated municipal wastewater by wetland vegetation.
AUTHOR Boyt, R.L. et al.
SOURCE Journal of the Water Pollution Control Federation. 1977. v. 49. p. 780.
PUBLISHER
PAGES
DATE 1977
CALLNUM 293. 8 SE8
ANNOTATION The town of Wildwood Florida had been releasing secondary treated wastewater into a mixed hardwood swamp for 20 years. The Florida Department of Environmental Regulation was concerned that nutrients from the wastewater effluent might reach Lake Panasoffkee. This paper presents a description of the study area, experimental design, and the results of the swamp's effectiveness in nutrient uptake.

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CATEGORY HW
SUBCATEGOR

TITLE Report on the use of wetlands for municipal wastewater treatment and disposal.
AUTHOR Environmental Protection Agency.
SOURCE EPA Report 430/09-88-005.
PUBLISHER NTIS Accession No.: PB88-233481/XAB
PAGES 32p.
DATE 1987
CALLNUM IPM 911118407
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Revolution in wastewater treatment.
AUTHOR Gillette, B.
SOURCE Biocycle, Vol. 29, No. 3.
PUBLISHER
PAGES pp. 49-51
DATE 1988
CALLNUM 57.8 C734
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Secondary treatment of domestic wastewater using floating emergent macrophytes.
AUTHOR Debusk, T.A., P.S. Burgoon and K.R. Reddy.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural.
PUBLISHER Chelsea, MI: Lewis Publishing, Inc.
PAGES pp. 525-529
DATE 1989
CALLNUM TD 756.5 C66
ANNOTATION Studies in Florida have demonstrated that shallow ponds containing large-leaved floating macrophytes, such as pennywort and water hyacinth, can remove biochemical oxygen demand (BOD) from domestic wastewaters. Because pennywort and water hyacinth cannot grow year long in cooler climates, the authors examined BOD and suspended solids removal rates from primary effluent using floating and emergent macrophytes cultured in pond and gravel-bed systems.

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CATEGORY HW
SUBCATEGOR

TITLE Sewage treatment in helophyte beds--first experiences with a new treatment procedure.
AUTHOR Bucksteeg, K.
SOURCE Wat. Sci. Tech. 19 (10) 1987, 1-10
PUBLISHER
PAGES
DATE
CALLNUM TD420 A1P7
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Sewage treatment with plants.
AUTHOR Stott, R.F. and S.J.L. Wright.
SOURCE Letters in Applied Microbiology. 12(4): 99-105.
PUBLISHER
PAGES
DATE April 1991.
CALLNUM QR1 L47
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Technical report: the effects of wastewater treatment facilities on wetlands in the midwest.
AUTHOR USEPA
SOURCE EPA-905/3-83-002
PUBLISHER
PAGES
DATE 1983, Sept.
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE The use of Phragmites for wastewater treatment by the root zone method--the UK approach.
AUTHOR Cooper, P.F. and A.G. Boon.
SOURCE Aqautic Plants for Water Treatment and Resource Recovery.
PUBLISHER Orlando, Fl: Magnolia Publishing, Inc.
PAGES pp. 153-174
DATE 1987
CALLNUM TD475 C65 1986
ANNOTATION The root zone method of wastewater treatment is being evaluated in the United Kingdom. It may have significant benefits in relation to operational costs and performance for the treatment of sewage for small populations, especially in rural areas. The treatment process is described and compared with similar processes.

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CATEGORY HW
SUBCATEGOR

TITLE Treatment of wastewater using artificial wetlands: Large-scale, fixed-film bioreactors.

AUTHOR Bavor, H.J., et al.
SOURCE Austrialian Biotechnology. 1987 v. 1 (4).
PUBLISHER
PAGES
DATE 1987
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE TVA's constructed wetlands demonstration.
AUTHOR Choate, K.D., J.T. Watson and G.R. Steiner.
SOURCE Constructed Wetlands for Water Quality Improvement
PUBLISHER CRC Press, Inc.
PAGES pp 509-516
DATE 1993
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Use of artificial wetlands for wastewater treatment.
AUTHOR Wile, I., G. Palmateer, and G. Miller.
SOURCE Presented at Minnesota Water Planning Board, Wetlands Values & Management Conference, St. Paul, MN, June 17-19, 1981.
PUBLISHER Original doc. avail. from Bowker
PAGES
DATE
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Utilization of natural ecosystems for wastewater renovation.
AUTHOR Burton, T.M., D.L. King, R.C. Ball and T.G. Bar.
SOURCE EPA-905/3-79-003 USEPA Region V, Great Lakes National Programs Office.
PUBLISHER
PAGES 155p.
DATE 1979, April
CALLNUM TD 746 U78
ANNOTATION Michigan State University in cooperation with the City of East Lansing, Michigan, constructed a permanent facility for the experimental treatment, recycle and reuse of municipal sewage plant effluent. The waste flow is directed into an intensely

managed aquatic and terrestrial nutrient recycling system. This report presents the preliminary research results.

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CATEGORY HW
SUBCATEGOR

TITLE Wastewater treatment by artificial wetlands.
AUTHOR Gersberg, R.M., B.V. Elkins, and C.R. Goldman.
SOURCE Water Science and Technology. 1984. v. 17 p. 443-50.
PUBLISHER
PAGES
DATE 1984
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Wastewater treatment by constructed wetlands: Using nature's way with an engineered constructed wetlands may be the solution to your wastewater treatment problems.
AUTHOR Tennessee Valley Authority.
SOURCE TVA Water Quality Branch.
PUBLISHER Chattanooga
PAGES
DATE 1987
CALLNUM TD756.5 W3
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Wastewater treatment using aquatic plants.
AUTHOR Fisher, P.J.
SOURCE Alternative Waste Treatment Systems.
PUBLISHER New York: Elsevier Science Publishing Co.
PAGES pp. 34-44
DATE 1988
CALLNUM TD511 A53
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Wetlands and wastewater management: questions, answers,

advice, and guidance.
AUTHOR Wernstedt, K.
SOURCE EPA, Office of Cooperative Environmental Management, Report No.:EPA/600/9-89/028
PUBLISHER
PAGES 178p.
DATE 1988
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Wetlands wastewater treatment systems.
AUTHOR Small, M.M.
SOURCE Proceedings of the International Symposium, State of Knowledge in Land Treatment of Wastewater, Hanover, NH, August 20-25, 1978.
PUBLISHER
PAGES
DATE 1978, June
CALLNUM TD760. S8 1978 Vol. 2
ANNOTATION Judging from the demonstrated performance of two artificial wetland prototypes, it appears that these systems are technically superior to conventional secondary treatment plants and can be theequivalent of advanced water treatment plants. Construction, operating cost, design constraints of the wetlands, and a discussions of extensions for other prototype designs are presented in this paper.

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CATEGORY HW
SUBCATEGOR ancillary benefits

TITLE Creation and management of wetlands using municipal wastewater in northern Arizona: a status report.
AUTHOR Wilhelm, M., S.R. Lawry and D.D. Hardy.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural
PUBLISHER Chelsea, MI: Lewis Publishers, Inc.
PAGES pp. 179-185
DATE 1989
CALLNUM TD 756. 5 C66
ANNOTATION Appropriation of water for agricultural, industrial and municipal uses has decreased natural wetland habitats. Municipal wastewater used to create new wetlands in northwestern Arizona may offset natural wetland losses.

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CATEGORY HW

SUBCATEGOR ancillary benefits

TITLE Land treatment of municipal wastewater on Mississippi Sandhill Crane National Wildlife Refuge for wetlands/crane habitat enhncement: a status report.
AUTHOR Hardy, J.W.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural
PUBLISHER Chelsea, MI: Lewis Publishers, Inc.
PAGES pp. 186-190
DATE 1989
CALLNUM TD 756. 5 C66
ANNOTATION One of the primary objectives for recovery and survival of the Mississippi sandhill crane is to restore desirable habitats, including plant communities and water regimes. Following lengthy feasibility reviews, governmental agencies signed a memorandum of understanding to allow land treatment of primary-treated effluent on the Mississippi Sandhill Crane National Wildlife Refuge. The two components of the project are a lagoon system and the land treatment system.

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CATEGORY HW
SUBCATEGOR ancillary benefits

TITLE Wastewater treatment/disposal in a combined marsh and forest system provides for wildlife habitat and recreational use.
AUTHOR James, B.B. and R. Bogaert.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural
PUBLISHER Chelsea, MI: Lewis Publishers, Inc.
PAGES pp. 597-605.
DATE 1989
CALLNUM TD 756. 5 C66
ANNOTATION The Mt. View Sanitary District treatment plant treats sewage flows averaging 5300 m3/day with comminution, primary sedimentation, two-stage high-rate biofiltration, secondary sedimentation, chlorination, and dechlorination. This paper presents a summary of 15 years of operating experience on two wetland areas constructed in the 1970's and the marsh/forest pilot project, receiving secondary effluent from the district's wastewater treatment plant as the sole water source.

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CATEGORY HW
SUBCATEGOR aquaculture

TITLE Aquatic plant culture for waste treatment and resoure recovery.
AUTHOR Kingsley, J.B., J.J. Maddox and P.M. Giordano.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural.
PUBLISHER Chelsea, MI: Lewis Publishing, Inc.

PAGES pp. 542-549
DATE 1989
CALLNUM TD 756. 5 C66
ANNOTATION There has been limited efforts to recover useful products from artificial wetland systems that treat liquid waste streams from municipalities, industries, and agricultural enterprises. Some of the aquatic plants with potential uses in industry and agriculture are Chinese water chestnuts, cattails, and common reeds. This project demonstrated the potential of three aquatic macrophytes to remove pollutants from wastewater and produce useful crops.

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CATEGORY HW
SUBCATEGOR aquaculture

TITLE Assessment of aquaculture for reclamation of wastewater.
AUTHOR Duffer, W.R.
SOURCE Water Reuse.
PUBLISHER Ann Arbor, MI: Ann Arbor Science.
PAGES pp. 349-367
DATE 1982
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR aquaculture

TITLE Combined artificial wetlands and high rate algal pond for wastewater treatment and protein production.
AUTHOR Wood, A., J. Scheepers and M. Hills.
SOURCE Water Science and Technology Vol. 2 (of 5). p659-668.
PUBLISHER
PAGES pp 659-668
DATE 1989
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR aquaculture

TITLE Municipal wastewater aquaculture.
AUTHOR Duffer, W.R. and J.E. Moyer.
SOURCE NTIS PB-284. EPA-600/2-78-110
PUBLISHER
PAGES 46p
DATE 1978, June
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR case studies

TITLE Marsh-pond-meadow treatment facility.
AUTHOR Walters, D.H.
SOURCE Case Study 1 of the Case Study Series. Small Flows. January 1986.
PUBLISHER Morgantown, WV: West Virginia University.
PAGES
DATE 1986, Jan 17.
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR case studies, KY

TITLE Analysis of gravel cell number three, Benton, KY wetlands.
AUTHOR Kadlec, R. H.
SOURCE Report prepared for the TVA.
PUBLISHER
PAGES
DATE 1991, April
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR case studies, PA pollutant removal, N

TITLE Nitrification and denitrification at the Iselin, Pennsylvania marsh/pond/meadow facility.
AUTHOR Davido, R.L. and T.E. Conway.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural.
PUBLISHER Chelsea, MI: Lewis Publishing, Inc.
PAGES pp 477-83
DATE 1989
CALLNUM TD756.5 C66
ANNOTATION Combinations of marshes, ponds and meadows can be effective wastewater treatment systems. The Iselin Marsh/Pond/Meadow is an example of an active wetland system that has proven effective in removing nitrogen from wastewater. The authors intend to define major zones of nitrification and denitrification and provide base data for future work at the site for optimizing removal capacities.

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CATEGORY HW
SUBCATEGOR case studies--CA

TITLE Constructed free surface wetlands to treat and receive wastewater: pilot project to full scale.
AUTHOR Gearheart, R.A., F. Klopp, and G. Allen.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural
PUBLISHER Chelsea, MI: Lewis Publishers, Inc.
PAGES pp. 121-137
DATE 1989
CALLNUM TD 756. 5 C66
ANNOTATION The city of Arcata, California has completed four years of a pilot project study that polished secondary-treated wastewater with constructed freshwater wetlands. The pilot study demonstrated that a constructed wetland can provide reliable tertiary treatment for municipal wastewater. This paper presents the pilot studies results and conclusions, two years of full-scale wetland operation. In addition the pilot's wetland management and design criteria for wastewater treatment are presented.

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CATEGORY HW
SUBCATEGOR case studies--MN

TITLE Minnesota's experience with the biologically activated soil filtration unit.
AUTHOR Tomasek, M.D., G.E. Johnson and P.J. Mulloy.
SOURCE Water Quality Division, Minnesota Pollution Control Agency, 6th Annual International Symposium, Lake and Reservoir Management: Influences of Nonpoint Source Pollutants and Acid Precipitation,
PUBLISHER
PAGES
DATE November 1986.
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR case studies--NY

TITLE Data report, marsh/pond sewage treatment plants.
AUTHOR Small, M.M.
SOURCE Dept. of Applied Science, Brookhaven National Laboratory, Upton, NY.
PUBLISHER
PAGES
DATE 1976, May
CALLNUM
ANNOTATION The Marsh/Pond located at Brookhaven National Laboratory is a

prototype natural wastewater treatment facility whose purpose is to continuously renovate sewage to groundwater rechargeable quality. Since the system is still under study, it is premature to draw detailed observations; however, the purpose of this paper is to present the principal data from one year of test observations.

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CATEGORY HW
SUBCATEGOR case studies--NY

TITLE Data report, meadow/marsh/pond system.
AUTHOR Small, M.M. and C. Wurm.
SOURCE Brookhaven National Laboratory
PUBLISHER NTIS BNL-50675
PAGES 28p.
DATE 1977
CALLNUM TD760 S7
ANNOTATION The Meadow/Marsh/Pond has been in various modes of continuous operation since 1973 for the purpose of renovating blends of septage and weak sewage to groundwater recharge quality. The system is economical to build and operate, attractive, free of disease vectors, aerosols and objectionable odors. This paper presents a report that summarizes 13 months of operating data.

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CATEGORY HW
SUBCATEGOR case studies--NY

TITLE Meadow/marsh systems as sewage treatment plants.
AUTHOR Small, M.M.
SOURCE Brookhaven National Laboratory, Upton, NY.
PUBLISHER NTIS BNL-20757
PAGES
DATE 1975
CALLNUM
ANNOTATION For the past three years Brookhaven National Laboratory has been building, operating and testing Marsh/Meadow/Pond and Marsh/Pond sewage treatment systems. Presently, there is no clear choice on which system is better. Therefore, it is expected that land availability, terrain, and crop value will be the principal determinants in a choosing a system.

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CATEGORY HW
SUBCATEGOR case studies--New Zealand

TITLE Constructed wetlands for wastewater treatment: The New Zealand experience.
AUTHOR Bhamidimarri, R., et al.
SOURCE Water Science and Technology. 1991. v. 24 (5) p. 247-53.

PUBLISHER
PAGES
DATE 1991
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR case studies--Ontario, CAN.

TITLE Listowel artificial marsh treatment project.
AUTHOR Herskowitz, J., S. Black and W. Lewandowski.
SOURCE Aquatic Plants for Water Treatment and Resource Recovery.
PUBLISHER Orlando, FL: Magnolia Publishing, Inc.
PAGES pp. 247-254
DATE 1987
CALLNUM
ANNOTATION Complete mix aeration cell effluent and lagoon effluent were treated in five separate cattail marsh treatment systems for four years. The marsh systems demonstrated large reductions in biochemical oxygen demand, suspended solids and bacteria on a year round basis. The marsh effluent treatment quality ranged between conventional secondary and tertiary treatment levels.

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CATEGORY HW
SUBCATEGOR case studies--Ontario, CAN.

TITLE Use of artificial cattail marshes to treat sewage in northern Ontario, Canada.
AUTHOR Miller, G.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural.
PUBLISHER Chelsea, MI: Lewis Publishing, Inc.
PAGES pp. 636-642
DATE 1989
CALLNUM td 796.5 c66
ANNOTATION A southwestern Ontario marsh project established that a properly configured cattail marsh has the capacity to significantly improve the quality of sewage wastewater. This inexpensive marsh treatment technology seemed ideally suited for some northern Ontario communities that could not afford the capital costs of conventional sewage treatment. This paper presents the findings of the study.

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CATEGORY HW
SUBCATEGOR case studies--S. Africa

TITLE Experimental investigations into the use of emergent plants

to treat sewage in South Africa.
AUTHOR Alexander, W.V. and A. Wood.
SOURCE Water Science and Technology, Vol. 19, No. 10.
PUBLISHER
PAGES pp. 51-59
DATE 1987
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR case studies--S. Africa

TITLE Low-cost and low-energy wastewater treatment systems: A South-African perspective.
AUTHOR Batchelor, A. et al.
SOURCE Water Science and Technology. 1991. v. 24 (5) p. 241-246.
PUBLISHER
PAGES
DATE
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR case studies--SE USA

TITLE Demonstration of constructed wetlands for treatment of municipal wastewaters, monitoring report for the period: March 1988 to October 1989.
AUTHOR Choate, K.D., J.T. Watson and G.R. Steiner.
SOURCE TVA/WR/WQ--90/11
PUBLISHER
PAGES 107p.
DATE 1990, August
CALLNUM
ANNOTATION Three full-scale wetland treatment systems were constructed for the purpose of investigating and promoting the feasibility and benefits of using constructed wetlands for treating domestic wastewater. The constructed wetlands designs, operation status, and performance are presented in this report. Based on the findings, changes in the monitoring and operation of each system are addressed.

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CATEGORY HW
SUBCATEGOR case studies--SE USA

TITLE First semiannual monitoring report: demonstration of constructed wetlands for treatment of municipal wastewater, March to December 1988.

AUTHOR Choate, K.D., G.R. Steiner and J.T. Watson.
SOURCE TVA/WR/WQ--89/5
PUBLISHER
PAGES 36p.
DATE 1989, July
CALLNUM
ANNOTATION Since standardized design criteria are currently not available to engineers and regulators, several governmental agencies implemented a demonstration to investigate and promote the feasibility and benefits of using constructed wetlands for treating domestic wastewater. Three full-scale wetland treatment systems were constructed and a description of the systems are presented in this report. Also the initial ten months of monthly monitoring data and a dye study for the Benton system is presented.

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CATEGORY HW
SUBCATEGOR case studies--FL

TITLE Community waste research at the Walt Disney World resort complex.
AUTHOR _____.
SOURCE unpublished
PUBLISHER
PAGES
DATE no date
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR case studies--FL

TITLE Man-made wetlands for wastewater treatment: two case studies.
AUTHOR Jackson, J.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural.
PUBLISHER Chelsea, MI: Lewis Publishers, Inc.
PAGES pp. 574-580
DATE 1989
CALLNUM TD756. 5 C55
ANNOTATION State and federal agencies are discouraging the traditional practice of discharging treated wastewater directly to surface waters. Wastewater treatment technologies must develop effluent methods that use low-lying or otherwise less desirable lands while adequately protecting surface water resources. Two constructed wetlands that meet both of these criteria are presented in this paper.

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CATEGORY HW
SUBCATEGOR case studies--KY

TITLE Municipal waste water treatment by constucted wetlands--a TVA demonstration in western Kentucky.
AUTHOR Steiner, G.R., J.T. Watson and D.A. Hammer.
SOURCE Prepared for Presentation at the Conference on Increaseing our Wetland Resources, Washington, DC, October 4-7, 1987.
PUBLISHER TVA, Office of Nat. Resources and Economic Development, Div. of Air and Water Resources.
PAGES
DATE 1987
CALLNUM GH87.4 W47 1987
ANNOTATION

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CATEGORY HW
SUBCATEGOR case studies--KY

TITLE Performance of constructed wetland treatment systems at Benton, Hardin, and Pembroke, Kentucky during the early vegetation establishment phase.
AUTHOR Watson, J.T., K.D. Choate and G.R. Steiner.
SOURCE Constructed Wetlands in Water Pollution Control.
PUBLISHER Oxford: Pergamon Press
PAGES pp. 171-182
DATE 1990
CALLNUM TD 756. 5 I57
ANNOTATION

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CATEGORY HW
SUBCATEGOR case studies--SC

TITLE Performance of the boggy gut wetland treatment system, Hilton Head, South Carolina.
AUTHOR Knight, R.L. and K.A. Ferda.
SOURCE Wetlands: Concerns and Successes.
PUBLISHER Bethesda, MD: Am. Water Resources Assc.
PAGES pp. 439-450
DATE 1989
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR case studies--TN,KY

TITLE Municipal wastewater treatment with artificial wetlands--a TVA/Kentucky demonstration.

AUTHOR Steiner, G.R., et al.
SOURCE Aquatic Plants for Water Treatment and Resource Recovery.
PUBLISHER Orlando, FL: Magnolia Publishing, Inc.
PAGES pp. 923-932
DATE 1987
CALLNUM
ANNOTATION The use of artificial wetlands is neither widely known nor accepted by engineering firms and regulatory agencies. To circumvent this problem, the Tennessee Valley Authority in cooperation with the Kentucky Division of Water has implemented a project to demonstrate the feasibility and benefits of artificial wetlands sewage treatment systems. Three full scale treatment systems, marsh-pond-meadow, the root-zone method, and the gravel marsh, will be constructed for technology demonstration and technology transfer.

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CATEGORY HW
SUBCATEGOR case studies--NV

TITLE Constructed wetlands at Mesquite, Nevada.
AUTHOR Crites, R.W., et al.
SOURCE Proceedings of the 1991 Specialty Conference on Environmental Engineering.
PUBLISHER New York: ASCE
PAGES p. 390-95.
DATE 1991.
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR case studies--CA

TITLE Final report City of Arcata marsh pilot project.
AUTHOR Gearheart, R.J. et al.
SOURCE Report C-06-2270.
PUBLISHER Arcata, CA: City of Arcata Dept. of Public Works
PAGES
DATE 1983
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR case studies--CA

TITLE Wastewater reclamation and reuse for Malibu, California.
AUTHOR Stone, H. and A. Bouchard.
SOURCE Water Resources Planning and Management and Urban Water Resources.

PUBLISHER New York, NY: ASCE
PAGES pp 249-253.
DATE 1991
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR case studies--CA--ancillary benefits

TITLE Wetlands creation for habitat and treatment at Mt. View sanitary district, California.
AUTHOR Demgen, F.C., et al.
SOURCE Aquatic Systems for Wastewater Treatment: Seminar Proceedings and Engineering Assessment.
PUBLISHER Washington: EPA Office of Water Programs Operaitons, Municipal Division
PAGES
DATE pp 61-73.
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR case studies--OR

TITLE Cannon Beach, Oregon wetlands/marsh.
AUTHOR Walters, D.H.
SOURCE Case Study 7 of the Case Study Series. Small Flows. March 1986.
PUBLISHER Morgantown, WV: West Virginia Univ.
PAGES
DATE 1986, March 6
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR Denmark

TITLE Danish experience with emergent hydrophyte treatment systems (EHTS) and prospects in the light of future requirements to outlet water quality.
AUTHOR Schierup H.H. and H. Brix.
SOURCE Small Wastewater Treatment Plants, Water Science and Technology. 1989. v. 22 (3/4) p. 65-72.
PUBLISHER
PAGES
DATE 1989
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR Denmark

TITLE Danish experience with sewage treatment in constructed wetlands.
AUTHOR Brix, H. and H.H. Schierup.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural
PUBLISHER Chelsea, MI: Lewis Publishers, Inc.
PAGES pp. 565-573
DATE 1989
CALLNUM TD 756. 5 C66
ANNOTATION Treating wastewater with the root-zone method was introduced as a low-cost, low technology decentralized solution capable of producing an effluent quality equivalent to or even exceeding, conventional tertiary treatment technology. The process depends on a horizontal subsurface flow through the common reed rhizosphere. The most important functions of macrophytes in the reeds beds are to supply oxygen to the aerobic microorganisms in the rhizosphere and to increase/stabilize the hydraulic permeability of the soil.

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CATEGORY HW
SUBCATEGOR Denmark--reed beds

TITLE Sewage treatment in constructed reed beds--danish experiences.
AUTHOR Brix, H. and H.H. Schierup.
SOURCE Water Science Technology J. Int. Assc. Water Pollut. Res. Cont. Vol. 21 (12) p. 1665-1668, 1989.
PUBLISHER
PAGES pp 1665-1668
DATE 1989
CALLNUM DNAL TD420.A1P7
ANNOTATION

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CATEGORY HW
SUBCATEGOR design considerations

TITLE Constructed wetlands and aquatic plant systems for municipal wastewater treatment process design manual.
AUTHOR Environmental Protection Agency.
SOURCE EPA Report 625/1-88/022.
PUBLISHER Cincinnati: U. S. EPA Center for Environmental Information
PAGES
DATE 1988
CALLNUM

ANNOTATION

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CATEGORY HW
SUBCATEGOR design considerations--operations

TITLE Integrated wastewater treatment using artificial wetlands: a gravel marsh case study.
AUTHOR Gersberg, R.M., S.R. Lyon, R. Brenner and B.V. Elkins.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural
PUBLISHER Chelsea, MI: Lewis Publishers, Inc.
PAGES pp. 145-152
DATE 1989
CALLNUM TD 756. 5 C66
ANNOTATION Artificial wetlands have the capability to perform integrated wastewater treatment using natural processes, with low energy input, and capital and operation and maintenance expense, make them very attractive for use by small to medium-sized communities for meeting discharge limitations. The primary objective of this paper is to present design and operational data on the use of artificial wetlands to perform secondary treatment of municipal wastewater. A second objective is to describe the mechanisms of nitrogen and total coliform bacteria removal.

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CATEGORY HW
SUBCATEGOR design considerations--performance--reed beds

TITLE Land-treatment systems: design and performance with special reference to reed beds.
AUTHOR Bayes, C.D., D.H. Bache and R.A. Dickson.
SOURCE Journal of the Institution of Water Engineers and Scientists, Vol. 3, No. 6.
PUBLISHER
PAGES 1989, December
DATE
CALLNUM TD 420 W374
ANNOTATION

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CATEGORY HW
SUBCATEGOR design--construction--costs

TITLE Constructed wetlands: design, construction, and costs.
AUTHOR Whalen, K.J., P.S. Lombardo, D.B. Wile, and T.H. Neel.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural.
PUBLISHER Chelsea, MI: Lewis Publishing, Inc.
PAGES pp 590-96

DATE 1989
CALLNUM TD 756. 5 C66
ANNOTATION The Mayo Water Reclamation Subdistrict Large Communal Water Reclamation Facility will treat septic tank effluent collected from 2000 homes. The reclamation facility consists of a recirculating sand filters, bulrush wetlands, ultraviolet disinfection, peat wetlands, a posteration aspirator, and an offshore wetland. Design and construction issues presented in this paper include process design, basin design, process control features, storm impact, construction, and construction costs.

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CATEGORY HW
SUBCATEGOR design--performance

TITLE Design and performance of the constructed wetland wastewater treatment system at Phillips High School, Bear Creek, Alabama.
AUTHOR Watson, J.T.
SOURCE TVA/WR/WQ-90/5.
PUBLISHER
PAGES
DATE 1990
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR design--performance--case studies--PA

TITLE Design and performance of the artificial wetlands wastewater treatment plant at Iselin, Pennsylvania.
AUTHOR Watson, J.T., F.D. Diodatao and M. Luach.
SOURCE
PUBLISHER Chatanooga, TN: Tenn. Valley Authority. Office of Natural Resources and Economic Development.
PAGES 15p
DATE 1986?
CALLNUM TD525 P4W3
ANNOTATION

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CATEGORY HW
SUBCATEGOR energy conservation

TITLE Energy conservation in municipal wastewater treatment.
AUTHOR Wesner, G.M., et al.
SOURCE MCD-32
PUBLISHER Washington, DC: EPA 430-9-77-011
PAGES
DATE 1978, March

CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR engineering considerations

TITLE Domestic wastewater treatment using emergent plants cultured in gravel and plastic substrates.
AUTHOR Burgoon, P.S., K.R. Reddy and T.A. DeBusk.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural
PUBLISHER Chelsea, MI: Lewis Publishers, Inc.
PAGES pp. 536-541
DATE 1989
CALLNUM TD 756. 5 C66
ANNOTATION Wetland substrate (except in the case of a soil matrix) is generally thought of as inert material that provides surface area for bacteria colinization. The use of high-specific-surface-area substrates in the trickling filter process has improved biochemical oxygen demand removal and nitrification when compared to the traditional gravel substrates. This study compared plant growth and wastewater treatment in two plastic substrates and in a one-centimeter-diameter gravel, each subtrate had different specific surface areas.

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CATEGORY HW
SUBCATEGOR engineering considerations

TITLE Wetlands for wastewater treatment: an engineering perspective.
AUTHOR Reed, S.C. and R.K. Bastian.
SOURCE Ecological Considerations in Wetlands Treatment of Municipal Wastewaters.
PUBLISHER New York: Van Nostrand Reinhold Co.
PAGES pp. 444-450
DATE 1985
CALLNUM QH 545 549 E3
ANNOTATION

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CATEGORY HW
SUBCATEGOR engineering considerations--Africa

TITLE Research to develop engineering guidelines for implementation of constructed wetlands for wastewater treatment in southern Africa.
AUTHOR Wood, A. and L.C. Hensman.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural.

PUBLISHER Chelsea, MI: Lewis Publishing, Inc.
PAGES pp. 581-589
DATE 1989
CALLNUM TD 756. 5 C66
ANNOTATION Increasing production and disposal of domestic wastewaters have caused accelerated eutrophication of many of South Africa's evaluate the potential for constructed wetlands in wastewater treatment. This paper presents current research designed to provide engineering data on the biological and physiogeochemical constraints of the constructed wetland concept.

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CATEGORY HW
SUBCATEGOR engineering considerations--construction

TITLE Constructing the wastewater treatment wetlands: some factors to consider.
AUTHOR Tomljanovich, D.A. and O. Pereze.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural.
PUBLISHER Chelsea, MI: Lewis Publishing, Inc.
PAGES pp 399-404
DATE 1989
CALLNUM TD 756. 5 C66
ANNOTATION The size of constructed wetlands treating wastewater may range from several square meters to several hectares. Design parameters vary with size, site characteristics, hydrologic group, pollutant type and loading rate, geographic locale, watershed characteristics, proximity to residential development, and anticipated operation and maintenance requirements. Construction process of wastewater treatment wetland and some important factors that influence success are presented in this paper.

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CATEGORY HW
SUBCATEGOR engineering considerations--design--sizing

TITLE TVA's new design guidelines for constructed wetlands alter size, shape, design process.
AUTHOR Schutz, F.R.
SOURCE Small Flows. January 1992. v. 6 (1) p. 1.
PUBLISHER
PAGES
DATE 1992, Jan
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR Germany

TITLE Treatment of domestic sewage in emergent helophyte beds--German experiences and ATV-guidelines H 262.
AUTHOR Bucksteeg, K.
SOURCE Constructed Wetlands in Water Pollution Control.
PUBLISHER Pergamon Press, Inc
PAGES pp. 505-515
DATE 1990
CALLNUM TD 756. 5 I57
ANNOTATION Approximately 300 sewage treatment plants consisting of helophyte beds may be in operation in Germany. The beds consist of either gravel, sand, cohesive soil, or artificial mixtures of sand and soil, and many different varieties of helophyte were used. Experiences from several reed beds with cohesive soil are disappointing while ones with a specific helophyte bed consisting or iron-containing uniform sand shows good effluent results.

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CATEGORY HW
SUBCATEGOR gravel beds

TITLE Wastewater treatment by rooted aquatic plants in sand and gravel trenches.
AUTHOR Pope, P.
SOURCE Available from NTIS as PB81-213241
PUBLISHER
PAGES
DATE 1981
CALLNUM
ANNOTATION A process to treat municipal wastewater using a biological treatment process (utilizes higher aquatic plants and a series of trenches) that requires a minimal amount of mechanical equipment and manpower for normal operation was evaluated. The major goal was to achieve effluent meeting the U.S. Federal Effluent Standards. This paper presents a description of the system and a discussion of the results.

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CATEGORY HW
SUBCATEGOR gravel/reed beds

TITLE Reed bed treatment systems: experimental gravel beds at Gravesend--the southern water experience.
AUTHOR Christian, J.N.W.
SOURCE Constructed Wetlands in Water Pollution Control.
PUBLISHER Pergamon Press, Inc.
PAGES pp. 309-319
DATE 1990
CALLNUM TD 756. 5 I57
ANNOTATION Various types of domestic wastewaters were treated in experimental reed beds that utilized gravel as the growing medium for common reeds. The beds performed well although

several lessons were learned during the design, construction, planting and operational stages. With good weed control, reed beds have a pleasant appearance and provide a habitat for a large bird population.

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CATEGORY HW
SUBCATEGOR monitoring

TITLE Monitoring of constructed wetlands for wastewater.
AUTHOR Hicks, D.B. and Q.J. Stober.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural.
PUBLISHER 1989.
PAGES
DATE pp. 447-455.
CALLNUM TD 756.5 C66
ANNOTATION The use of constructed wetland for the disposal and treatment of wastewater is emerging as an alternative to conventional approaches for small communities and industries. Monitoring data are essential to measure the treatment levels and to indicate the functional status and biological integrity of the wetland system. The cost and effort of monitoring increases with chemical complexity of the influent to be treated and the ecological diversity of the wetlands to be maintained.

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CATEGORY HW
SUBCATEGOR

TITLE Brookhaven's two sewage treatment systems.
AUTHOR Small, M.M.
SOURCE Compost Science, Autumn, 1975.
PUBLISHER
PAGES
DATE 1975
CALLNUM 57.8 C734
ANNOTATION Two novel sewage treatment systems, Marsh/Meadow/Pond and Marsh/Pond, are in operation at the Brookhaven, NY. Both systems return drinkable water to the ground water supply, neither produces any sludge for further disposal, and both are in competition with one another to determine which is the least expensive to build and operate. This paper presents a description and the advantages and disadvantage of each system.

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CATEGORY HW
SUBCATEGOR

TITLE Iselin marsh pond meadow.
AUTHOR Conway, T.E. and J.M. Murtha.

SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural
PUBLISHER Chelsea, MI: Lewis Publishers, Inc.
PAGES pp. 139-144
DATE 1989
CALLNUM TD756. 5 C66
ANNOTATION Pennsylvania Sewage Facilities Act of 1966 initially favored large, centralized regional sewage treatment systems which became increasingly difficult for small communities to finance. With 3500 small communities unable to obtain funding, innovative approaches, like the Iselin, PA marsh-pond-meadow, were needed. This paper presents an overview of the Iselin marsh pond system from planning stages to on line treatment.

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CATEGORY HW
SUBCATEGOR NE USA

TITLE Mayo peninsula water reclamation facilities.
AUTHOR Dept. of Utilities, Anne Arundel Co. Maryland.
SOURCE
PUBLISHER
PAGES
DATE
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR nutrient removal

TITLE Nutrient removal using shallow lagoon-solid matrix macrophyte systems.
AUTHOR Bavor, H.J., W.E. Scott and A. Wood.
SOURCE Aquatic Plants for Water Treatment and Resource Recovery.
PUBLISHER Orlando, FL: Magnolia Publishing, Inc.
PAGES pp. 227-235
DATE 1987
CALLNUM
ANNOTATION This paper presents information on the design, operation, and performance of seven large-scale, shallow lagoon-macrophyte systems that receive secondary treated sewage effluent. The systems consist of gravel filled trenches which have been designed to have dense macrophyte, unplanted gravel, and open water sections. Removal of the effluent components (biochemical oxygen demand, nitrogen, and indicator bacteria) has been effective.

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CATEGORY HW
SUBCATEGOR pathogens/vectors

TITLE Fate of microbial indicators and viruses in a forested wetland.
AUTHOR Scheuerman, P.R., G. Bitton and S.R. Farrah.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural.
PUBLISHER Chelsea, MI: Lewis Publishing, Inc.
PAGES pp 657-63
DATE 1989
CALLNUM TD 756. 5 C66
ANNOTATION Wetlands have been suggested as an inexpensive means for tertiary treatment of sewage effluents. Concern regarding potential contamination of ground and surface waters with heavy metals, trace organics, nitrates, and microbial pathogens must be considered. Little is known regarding the fate of microorganisms in wetland systems, more is known about the fate of bacteria thanviruses, and improvement in bacteriological water quality of sewage effluents has been observed.

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CATEGORY HW
SUBCATEGOR pathogens/vectors

TITLE Mosquito production in constructed wetlands for treatment of municipal wastewater.
AUTHOR Tennessen, K.J. and M.K. Painter.
SOURCE TVA/WR/AB--90/4, March 1990
PUBLISHER
PAGES
DATE 1990
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR pathogens/vectors

TITLE Survival of bacteria and viruses in municipal wastewaters applied to artificial wetlands.
AUTHOR Gersberg, R.M., et al.
SOURCE Aquatic Plants for Water Treatment and Resource Recovery.
PUBLISHER Orlando: Magnolia
PAGES pp 237-247.
DATE 1987.
CALLNUM
ANNOTATION This paper presents a study where the survival of indigenous total coliform bacteria and seeded MS-2 bacteriophage was examined in artificial wetlands which received primary municipal wastewaters. The results demonstrate that artificial wetlands may serve as low-cost alternatives to conventional treatment systems for reducing the load of disease-causing bacteria and viruses to the aquatic environment.

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CATEGORY HW
SUBCATEGOR plants

TITLE Pennywort and duckweed marsh systems for upgrading wastewater effluent from a mechanical package plant.
AUTHOR Wolverton, B.C. and R.C. McCaleb.
SOURCE Aquatic Palnts for Water Treatment and Resource Recovery.
PUBLISHER Orlando, FL: Magnolia Publishing
PAGES pp. 289-294
DATE 1987
CALLNUM TD475 C65 1986
ANNOTATION

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CATEGORY HW
SUBCATEGOR plants

TITLE The use of aquatic macrophytes in water-pollution control.
AUTHOR Brix, H. and H.H. Schierup.
SOURCE Ambio. 1989. v. 18 p. 100-107.
PUBLISHER
PAGES
DATE 1989
CALLNUM QH 540. A52
ANNOTATION

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CATEGORY HW
SUBCATEGOR plants--water hyacinths

TITLE Multiple applications for water hyacinth.
AUTHOR Joglekar, V.R. and V.G. Sonar
SOURCE BioCycle, January, 1987.
PUBLISHER
PAGES pp. 46-48
DATE 1987
CALLNUM 57.8 C734
ANNOTATION The rapid urbanization of thousands of Indian towns has led to an urgent need to develop a financially self-sustaining composite system for recycling domestic wastewater. This paper presents a description of one such system and the research associated with its development.

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CATEGORY HW
SUBCATEGOR plants--water hyacinths

TITLE Upgrading wastewater treatment by water hyacinth in

developing countries.
AUTHOR Kumar, P. and R.J. Garde.
SOURCE Water Science and Technology, Vol. 22, No. 7/8.
PUBLISHER
PAGES pp. 153-160
DATE 1990
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR policy

TITLE Use of wetlands for municipal wastewater treatment and disposal: regulatory issues and EPA policies.
AUTHOR Bastian, R.K., P.E. Shanaghan and B.P. Thompson.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural.
PUBLISHER Chelsea, MI: Lewis Publishing, Inc.
PAGES pp. 265-278
DATE 1989
CALLNUM TD756. 5 C66
ANNOTATION Freshwater, brackish, and saltwater wetlands have served as natural water treatment systems for centuries. Studies have shown that wetlands are able to provide high levels of wastewater treatment. However, concern has been expressed over possible harmful effects of toxic materials and pathogens in wastewaters and long-term degradation of wetlands due to the additional nutrient and hydraulic loadings from wastewater discharge.

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CATEGORY HW
SUBCATEGOR policy--regulatory issues

TITLE Regulatory and policy considerations on wetlands and municipal wastewater treatment.
AUTHOR Davis, D. and J.C. Montgomery.
SOURCE Paper presented at the Conference on Aquatic Plants for Water Treatment and Resource Recovery, Orlando, FL, July 20-24, 1986.
PUBLISHER
PAGES 16p.
DATE 1986
CALLNUM TD 475 C65 1986
ANNOTATION Under section 404 of the Clean Water Act The Environmental Protection Agency (EPA) seeks to preserve wetlands through its review of Army Corps of Engineers or state permits for discharge of dredged or fill material to waters of the U.S. (which includes wetlands). EPA has identified wetlands values in their ability to utilize nutrients which would otherwise pollute streams, rivers and lakes and to act as buffers for non-point source water pollution. The agency also supports artificial

wetland-type treatment land treatment systems as part of its Innovative and Alternative wastewater construction grants program.

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CATEGORY HW
SUBCATEGOR polishing

TITLE Enhancing effluent water quality of sedimentation basins using constructed wetlands technology.
AUTHOR Taylor, H.N.
SOURCE Prodeedings - National Conference on Hydraulic Engineering.
PUBLISHER New York: ASCE
PAGES pp 746-50.
DATE 1991.
CALLNUM TC5 H824 1991
ANNOTATION

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CATEGORY HW
SUBCATEGOR polishing

TITLE The performance of an artificial wetland for the treatment of biological filter effluent.
AUTHOR Furnes, H.D., K.J. Healey, D.A. Kerdachi, and W.N. Richards.
SOURCE Paper presented at the Symposium on Ecology and Conservation of Wetlands in South Africa,
PUBLISHER
PAGES
DATE October 15-16, 1987.
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR pollutant removal

TITLE Design criteria for BOD5 removal in constructed reed beds.
AUTHOR Brix, H. et al.
SOURCE Preprints of proceedings of the international conference on design and operation of small wastewater treatment plants,
PUBLISHER Trondheim: Lewis Publishers, Inc.
PAGES p. 565-573.
DATE 1989.
CALLNUM
ANNOTATION

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CATEGORY HW

SUBCATEGOR pollutant removal N,P,COD--reed bed

TITLE Removal of nitrogen, phosphorus and COD from wastewater using sand filtration system with Phragmites australis.
AUTHOR Ariyawathie, G.
SOURCE Water Resources, 21 1217-24
PUBLISHER
PAGES
DATE 1987
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR pollutant removal--Austria

TITLE Root-zone system: Mannersdorf-new results.
AUTHOR Haberl, R. and R. Perfler.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural.
PUBLISHER Chelsea, MI: Lewis Publishing, Inc.
PAGES pp. 606-621
DATE 1989
CALLNUM TD 756. 5 C66
ANNOTATION Uncertainties regarding wetland treatment of sewage led to the decision to construct a full-sized experimental treatment plant and to manage it while allowing concurrent scientific studies. Proximity to an existing municipal sewage plant and soil conditions that did not require an impermeable membrane were some of the conditions for placing the site at Mannersdorf. This paper presents experimental results on sewage technology studies, hydraulic investigations, microbiological investigations, plant physiology studies, and soil science investigations.

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CATEGORY HW
SUBCATEGOR pollutant removal--metals

TITLE Removal of heavy metals and sewage sludge using the mud snail, Cipangopaludina chinensis malleata reeve, in paddy fields as artificial wetlands.
AUTHOR Kurihara, Y. and T. Suzuki.
SOURCE Water Science and Technology, Vol. 19, No. 12.
PUBLISHER
PAGES pp. 281-286
DATE 1987
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR pollutant removal--plants

TITLE Comparison of plant density and growth forms related to removal efficiencies in constructed wetlands treating municipal wastewaters.
AUTHOR Pullin, B.P. and D.A. Hammer.
SOURCE Tennessee Valley Authority Valley Resource Center, Waste Technology Program.
PUBLISHER
PAGES
DATE 1989, October
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR reed beds

TITLE Purification of domestic sewage with and without faeces by vertical itermittent filtration in reed and rush beds.
AUTHOR Bahlo, K.E. and F.G. Wach.
SOURCE Constructed Wetlands in Water Pollution Control.
PUBLISHER Pergamon Press, Inc.
PAGES pp. 215-221
DATE 1990
CALLNUM TD 756. 5 I57
ANNOTATION The description of two sewage treatment plants based on hydrophyte systems working under practical conditions are presented. One plant is fed with a normal domestic sewage and the other is fed with household wastewater without faeces. Both plants were operated from an intermittent application and flow of sewage effluent from septic tanks into this constructed wetland.

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CATEGORY HW
SUBCATEGOR reed beds--China

TITLE Reed-wetland beds for municipal wastewater treatment.
AUTHOR Tang, Y., et al.
SOURCE Journal of Environmental Science (China) 4 (1). 1992, pp 23-31
PUBLISHER
PAGES pp 23-31
DATE 1992
CALLNUM
ANNOTATION

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CATEGORY HW

SUBCATEGOR reed beds--design--operations

TITLE European design and operations guidelines for reed bed treatment systems
AUTHOR Cooper, P.E., (ed.)
SOURCE EC/EWPCA Emergent Hydrophyte Treatment Systems Expert Contact Group Report U1 17, Swindon, Wiltshire.
PUBLISHER
PAGES
DATE 1990
CALLNUM
ANNOTATION Approximately 500 Reed Bed Treatment Systems have been constructed in Western Europe since 1984. Removal efficiencies range from 80-90% for biochemical oxygen demand, 20-30% for nitrogen, and 30-40% for phosphorous. The purpose of this paper in not necessarily to recommend how to design the best working system, since the present knowledge does not allow this, but to advise constructors of items that should not be incorporated into system design.

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CATEGORY HW
SUBCATEGOR reed beds--Egypt

TITLE Reed-bed system purifies sewage, British research team to build full-scale test site in Egypt.
AUTHOR _____.
SOURCE BioCycle
PUBLISHER
PAGES
DATE 1987, Feb.
CALLNUM 57.8 C734
ANNOTATION

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CATEGORY HW
SUBCATEGOR reed beds--UK

TITLE Sewage treatment by reed bed systems: the present situation in the United Kingdom.
AUTHOR Cooper, P.F. and J.A. Hobson.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural
PUBLISHER Chelsea, MI: Lewis Publishers, Inc.
PAGES pp. 153-171
DATE 1989
CALLNUM TD 756. 5 C66
ANNOTATION The United Kingdom's Water Authority agreed that reed bed treatment system had potential for sewage systems for small rural situations, but it was clear that there were several areas of uncertainty. To make rapid progress and prevent duplication, a group was formed to coordinate research and development. This paper presents principles behind reed bed technology systems and

outline progress made to December 1987.

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CATEGORY HW
SUBCATEGOR reed beds--UK

TITLE Use of reed bed systems in th UK.
AUTHOR Cooper, P.F., J.A. Hobson and C. Findlater.
SOURCE Water Science and Technology, Vol. 22, No. 3/4.
PUBLISHER
PAGES pp. 57-64
DATE 1990
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR root-zone method

TITLE The applicability of the wastewater treatment plant in Otffresen as scientific documentation of the root-zone method.
AUTHOR Brix, H.
SOURCE Water Science and Technology. 1987. v. 19 (10) p. 19-24.
PUBLISHER
PAGES
DATE 1987
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR secondary treatment

TITLE Constructed wetlands for secondary treatment.
AUTHOR Mingee, T.J. and R.W. Crites.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural.
PUBLISHER Chelsea, MI, Lewis Publishers, Inc.
PAGES pp. 622-627
DATE 1989
CALLNUM TD 756. 5 C66
ANNOTATION Constructed wetlands can provide a low-cost wastewater treatment alternative to achieve secondary treatment for small to midsized communities. This paper presents a case study of a constructed wetland system utilizing emergent aquatic vegetation. The history, pilot-study effort, construction problems, construction costs, and initial performance data are included in this study.

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CATEGORY HW
SUBCATEGOR secondary treatment--tertiary treatment

TITLE Design, construction, establishment and operation of gravel bed hydroponic (GBH) systems for secondary and tertiary sewage treatment.
AUTHOR Butler, J.E., M.G. Ford, R.F. Loveridge and E. May.
SOURCE Constructed Wetlands for Water Pollution Control.
PUBLISHER Pergamon Press, Inc.
PAGES pp. 539-542
DATE 1990
CALLNUM TD 756. 5 C66
ANNOTATION Gravel bed hydroponic (GPH) system based on features presented in this paper have been operating satisfactorily for a number of years in both the United Kingdom and Egypt. GPH systems can provide a cost-effective and environmentally acceptable alternative to conventional biological sewage treatment. Important design features include bed length and depth, aggregate size and type, channel gradient, maintenance of an adequate water depth and choice of hydrophyte.

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CATEGORY HW
SUBCATEGOR secondary treatment--tertiary treatment

TITLE Gravel bed hydroponic systems used for secondary and tertiary treatment of sewage effluent.
AUTHOR Butler, J.E., R.F. Loveridge, M.G. Ford, D.A. Bone and R.F. Ashworth.
SOURCE Journal of the Institution of Water and Environmental Management, Vol. 4, No. 3.
PUBLISHER
PAGES pp. 276-284.
DATE 1990
CALLNUM
ANNOTATION Gravel bed hydroponic (GBH) systems planted with emergent hydrophytes can treat domestic sewage effluent to acceptable environmental standards in an economic and efficient manner. A discussion of Portsmouth Polytechnic reed-bed sewage treatment GBH projects in the UK and Egypt are presented in this paper along with an assessment of current progress.

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CATEGORY HW
SUBCATEGOR septage--case studies--MA

TITLE Solar aquatic treatment of septage.
AUTHOR Spencer, R.
SOURCE Biocycle. 31(5):66-70 (May 1990)
PUBLISHER
PAGES
DATE 1990. May

CALLNUM 57.8 C734
ANNOTATION

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CATEGORY HW
SUBCATEGOR septic tank effluent

TITLE Aquatic plant/microbial filters for treating septic tank effluent.
AUTHOR Wolverton, B.C.
SOURCE Constructed Wetlands for Wastewater Treatment: Municipal, Industrial and Agricultural
PUBLISHER Chelsea, MI: Lewis Publishers, Inc.
PAGES pp. 173-178
DATE 1989
CALLNUM TD 756. 5 C66
ANNOTATION Problems with septic tank systems are not normally associated with properly installed, sealed tanks, but with the leach fields. The authors studies indicate that septic tank effluent from single homes can be treated to advanced secondary levels or better by using a washed gravel filter. If a point source discharge is undesirable, a perforated leach field tubing should be used to disperse the treated rock/plant filter effluent beneath the soil according to soil tolerances.

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CATEGORY HW
SUBCATEGOR STP upgrades

TITLE Town uses constructed wetlands to upgrade treatment.
AUTHOR Schutz, F.R.
SOURCE Small Flows, Vol. 4, No. 4. may 1990
PUBLISHER West Virginia Univ.
PAGES
DATE 1990
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR STP upgrades

TITLE Utilization of created wetlands to upgrade small municipal wastewater treatment systems.
AUTHOR Pride, R.E., J.S. Nohrstedt and L.D. Benefield.
SOURCE Water, Air, and Soil Pollution 50:371-385, 1990
PUBLISHER
PAGES 371-3815
DATE 1990
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR tertiary treatment

TITLE Artificial wetlands as tertiary treatment systems.
AUTHOR Greiner, R.W. and G.D. Butijn.
SOURCE Water Science and Technology, Vol. 17, No. 8.
PUBLISHER
PAGES pp. 1429
DATE 1985
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR tertiary treatment

TITLE The use of freshwater wetlands as a tertiary wastewater treatment alternative.
AUTHOR Kadlec, R.H. and D.L. Tilton.
SOURCE CRC Critical Rewiews in Environmental Control
PUBLISHER
PAGES pp. 185-201
DATE 1979
CALLNUM QH 545 A1C7
ANNOTATION

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CATEGORY HW
SUBCATEGOR tertiary treatment

TITLE The use of wetands as a tertiary treatment procedure.
AUTHOR Kadlec, R.H. and J.A. Tilton.
SOURCE CRC Crit. Rev. Environ. Control. 1979. v. 9 p. 185-212.
PUBLISHER
PAGES
DATE 1979
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR tertiary treatment

TITLE Use of a forested wetland in South Carolina for tertiary treatment of municipal wastewater.
AUTHOR Baughman, D.S., et al.
SOURCE Water: Laws and Management.

PUBLISHER Bethesda, Md: Am. Water Resources Assc.
PAGES pp. 7A-25--7A-37
DATE 1989
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR tertiary treatment

TITLE Wetlands for tertiary treatment.
AUTHOR Kadlec, R.H.
SOURCE Wetlands Functions and Values: The State of Our Understanding.
PUBLISHER Minneapolis, MN: American Water Resoruce Association
PAGES pp. 490-504.
DATE 1979.
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR upgrade--design concepts--case studies, AL

TITLE Design of the Fort Deposit, Alabama, constructed wetlands treatment system.
AUTHOR Knight, R.L. and M.E. Inverson.
SOURCE Constructed Wetlands in Water Pollution Control.
PUBLISHER Oxford, UK: Pergamon Press.
PAGES pp. 521-524
DATE 1990
CALLNUM TD 756. 5 I57
ANNOTATION

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CATEGORY HW
SUBCATEGOR

TITLE Small wastewater reclamation systems: a necessity in drought-plagued California.
AUTHOR Dawyot, R.A.
SOURCE Small Flows, Vol. 5
PUBLISHER West Virginia Univ.
PAGES
DATE 1991, July 3.
CALLNUM
ANNOTATION

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CATEGORY HW
SUBCATEGOR water hyacinths--design

TITLE Evolution and performance of city of San Diego pilot wastewater treatment system using water hyacinths.
AUTHOR Tchobanoglous, G., F. Maitski, K. Thompson and T.H. Chadwick.
SOURCE Presented at the 60th Annual Conference of the Water Pollution Control Federation, Philadelphia, PA, October 5-8, 1987.
PUBLISHER
PAGES 36p.
DATE 1987
CALLNUM
ANNOTATION Since 1981, the city of San Diego has been experimenting with an aquatic system for the secondary treatment of wastewater. The aquatic system is based on the use of water hyacinth ponds. The purpose of this paper is to chronicle the evolution and performance of the water hyacinth based treatment system and to present a discussion of the important engineering and related considerations that must be addressed in the design of these systems.

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NOTE: THE FOLLOWING CITATIONS ARE AN UPDATE, AS OF OCTOBER 24, 1995, TO THE ORIGINAL DOCUMENT AND THEREFORE ARE IN A DIFFERENT FORMAT.

1 NAL Call No.: 100--M693Sp-no.457
Design of submerged flow wetlands for individual homes and small wastewater flows.
Sievers, D. M.;
University of Missouri Columbia. Agricultural Experiment Station.
Columbia, MO : Missouri Small Wastewater Flows Education & Research Center, Agriculture Experiment Station, College of Agriculture Food & Natural Resources, University of Missouri--Columbia, [1993] 11 p. : ill..
Cover title.

Descriptors: Constructed wetlands; Sewage Purification; Septic tanks; Typha; Aquatic weeds

2 NAL Call No.: TD756.5.S74--1993
General design, construction, and operation guidelines : constructed wetlands wastewater treatment systems for small users including individual residences. 2nd ed.
Steiner, G. R.; Watson, J. T.;
Tennessee Valley Authority. Water Management Resources Group. Chattanooga, Tenn. : Tennessee Valley Authority, Resource Group, Water Management, [1993] vi, 42 leaves : ill..
"May 1993.".

Descriptors: constructed wetlands; sewage Purification

3 NAL Call No.: TD420.A1P7
Investigation into the use of constructed reedbeds for municipal waste dump

leachate treatment.
Urbanc Bercic, O.
Water science and technology: a journal of the International Association on Water Pollution Research and Control v.29, p.289-294. (1994).
In the series analytic: Wetlands systems in water pollution control / edited by H.J. Bavor and D.S. Mitchell. Australia.

Descriptors: landfill leachates; biological treatment; wetlands; phragmites australis; gravel; biochemical oxygen demand; chemical oxygen demand; waste water treatment; yugoslavia; artificial wetlands; slovenia; constructed wetlands

4 NAL Call No.: TD420.A1P7
Factors affecting nitrogen removal in horizontal flow reed beds.
Platzer, C.; Netter, R.
Water science and technology: a journal of the International Association on Water Pollution Research and Control v.29, p.319-324. (1994).
In the series analytic: Wetlands systems in water pollution control / edited by H.J. Bavor and D.S. Mitchell. Australia.

Descriptors: sewage effluent; waste water treatment; biological treatment; wetlands; nitrogen; removal; nutrient uptake; aquatic plants; evapotranspiration; nitrification; aquatic plants; evapotranspiration; nitrification; denitrification; environmental temperature; austria; germany; constructed wetlands; artificial wetlands

5 NAL Call No.: TD420.A1P7
Orange County Florida Eastern Service Area reclaimed water wetlands reuse system.
Schwartz, L. N.; Wallace, P. M.; Gale, P. M.; Smith, W. F.; Wittig, J. T.; McCarty, S. L.
Water science and technology: a journal of the International Association on Water Pollution Research and Control v.29, p.273-281. (1994).
In the series analytic: Wetlands systems in water pollution control / edited by H.J. Bavor and D.S. Mitchell. Australia.

Descriptors: wetlands; water reuse; waste water treatment; sewage effluent; nutrients; removal; nutrient uptake; florida; constructed wetlands; artificial wetlands

6 NAL Call No.: KF27.P89632-1992
The role of constructed wetlands and other alternative technologies in meeting the wastewater treatment needs of rural and small communities : hearing before the Subcommittee on Investigations and Oversight of the Committee on Public Works and Transportation, House of Representatives, One Hundred Second Congress, second session, August 4, 1992.
United States. Congress. House. Committee on Public Works and Transportation. Subcommittee on Investigations and Oversight. Washington : U.S. G.P.O. : For sale by the U.S. G.P.O., Supt. of Docs., Congressional Sales Office, 1992 [i.e. 1993]. iii, 303 p. : ill..
Distributed to some depository libraries in microfiche.

Descriptors: constructed wetlands- United States; sewage disposal, rural United States- technological innovations; sewage purification technological innovations

7 NAL Call No.: TD420.A1P7
Treatment of nitrogen and phosphorus by a constructed upland-wetland wastewater treatment system.
House, C. H.; Broome, S. W.; Hoover, M. T.
Water science and technology: a journal of the International Association on Water Pollution Research and Control v.29, p.177-184. (1994).
In the series analytic: Wetlands systems in water pollution control / edited by H.J. Bavor and D.S. Mitchell. Australia.

Descriptors: sewage effluent; waste water treatment; biological treatment; wetlands; phosphorus; ammonium; nitrate; removal; nutrient uptake; nitrification; phragmites australis; typha angustifolia; north carolina; constructed wetlands; artificial wetlands

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Questions about full-text documents represented by these citations? See current NAL document delivery information.

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