

A TRAINING COURSE FOR MITIGATION BANKING & IN-LIEU FEE PROGRAM INTERAGENCY REVIEW TEAMS

June 25-29, 2018

DVD-ROM Contents

I. Key Policy Resources

- A. *Department of Defense and Environmental Protection Agency. April 10, 2008. *Compensatory Mitigation for Losses of Aquatic Resources*. Final rule. Federal Register. Vol. 73, No. 70: pp. 19594-19705. [<https://www.epa.gov/cwa-404/compensatory-mitigation>] *hard copy under own tab in notebook
- B. U.S. Department of Transportation, Federal Aviation Administration. August 28, 2007. *Advisory Circular: Hazardous Wildlife Attractants On or Near Airports*. AC No: 150/5200-33B. [http://www.faa.gov/documentLibrary/media/advisory_circular/150-5200-33B/150_5200_33b.pdf]
- C. U.S. Army Corps of Engineers. August 3, 2008. *Minimum Monitoring Requirements for Compensatory Mitigation Projects Involving, Restoration, Establishment and/or Enhancement of Aquatic Resources*. Regulatory Guidance Letter No. 08-03. [http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/rql08_03.pdf]
- D. U.S. Army Corps of Engineers. *Guidance on the Use of Financial Assurances, and Suggested Language for Special Conditions for Department of the Army Permits Requiring Performance Bonds*. Regulatory Guidance Letter No. 05-01. [http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/rql05_01.pdf]
- E. U.S. Army Corps of Engineers and U.S. Environmental Protection Agency. November 7, 2003. *Model Compensatory Mitigation Plan Checklist for Aquatic Resource Impacts Under the Corps Regulatory Program Pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act*. Memorandum to the Field. [<https://www.epa.gov/cwa-404/model-mitigation-plan-checklist>]
- F. U.S. Army Corps of Engineers. October 29, 2003. *Model "Operational Guidelines for Creating or Restoring Wetlands that are Ecologically Self-Sustaining" for Aquatic Resource Impacts Under the Corps Regulatory Program Pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act*. Memorandum to the Field. [<https://www.epa.gov/cwa-404/memorandum-field-adaptation-national-research-council-compensatory-mitigation-guidelines>]
- G. Federal Aviation Administration, U.S. Air Force, Department of the Army, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S. Department of Agriculture. July 2003. *Memorandum of Agreement Between the Federal Aviation Administration, the U.S. Air Force, the U.S. Army, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the U.S. Department of Agriculture to Address Aircraft-Wildlife Strikes*.

[\[https://www.epa.gov/cwa-404/federal-aviation-administration-memorandum-agreement-address-aircraft-wildlife-strikes\]](https://www.epa.gov/cwa-404/federal-aviation-administration-memorandum-agreement-address-aircraft-wildlife-strikes)

- H. Department of the Army, Federal Highway Administration, and U.S. Environmental Protection Agency. July 11, 2003. *Federal Guidance on the Use of the TEA-21 Preference for Mitigation Banking to Fulfill Mitigation Requirements Under Section 404 of the Clean Water Act*.
[\[https://www.epa.gov/cwa-404/transportation-equity-act-21st-century-tea-21-guidance-federal-highway-administration\]](https://www.epa.gov/cwa-404/transportation-equity-act-21st-century-tea-21-guidance-federal-highway-administration)
- I. U.S. Fish and Wildlife Service. September 10, 1999. *Final Policy on the National Wildlife Refuge System and Compensatory Mitigation Under the Section 10/404 Program*. Federal Register. Vol. 64, No. 175: 49229-49234.
[\[http://www.fws.gov/habitatconservation/Refuge%20Mitigation%20Policy%201999FR.pdf\]](http://www.fws.gov/habitatconservation/Refuge%20Mitigation%20Policy%201999FR.pdf)
- J. U.S. Army Corps of Engineers. Nov 6, 2008. *Implementation Guidance for the Water Resource Development Act of 2007- Section 2036(c) Wetlands Mitigation*.
[\[http://planning.usace.army.mil/toolbox/library/WRDA/wrda07sec2036c.pdf\]](http://planning.usace.army.mil/toolbox/library/WRDA/wrda07sec2036c.pdf)
- K. U.S. Army Corps of Engineers. Aug 31, 2009. *Implementation Guidance for Section 2036(a) of the Water Resources Development Act of 2007 (WRDA) – Mitigation for Fish and Wildlife and Wetlands Losses*.
[\[http://planning.usace.army.mil/toolbox/library/WRDA/wrda07sec2036a.pdf\]](http://planning.usace.army.mil/toolbox/library/WRDA/wrda07sec2036a.pdf)
- L. U.S. Environmental Protection Agency and U.S. Department of the Army. February 6, 1990. *Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines*. [\[https://www.epa.gov/cwa-404/memorandum-agreement\]](https://www.epa.gov/cwa-404/memorandum-agreement)
- M. U.S. Environmental Protection Agency. 1980. *Guidelines for Specification of Disposal Sites for Dredged or Fill Material*. Federal Register. Vol. 45, No. 249: 85336-85357. [\[https://www.epa.gov/cwa-404/section-404b1-guidelines-40-cfr-230\]](https://www.epa.gov/cwa-404/section-404b1-guidelines-40-cfr-230)

II. Session Resources

Session 1: Overview of 3rd Party Mitigation Policy and Regulations

Policy/Guidance/SOPs:

- Department of the Army, Office of the Assistant Secretary, Civil Works. Implementation Guidance for Section 1162 of the Water Resources Development Act of 2016 and Section 1040 of the Water Resources Reform and Development Act of 2014, Fish and Wildlife Mitigation. Memorandum for Commanding General. February 1, 2018.
- Department of the Army, Office of the Assistant Secretary, Civil Works. Implementation Guidance for Section 1163 of the Water Resources Development Act of 2016 (WRDA 2016), Wetlands Mitigation. Memorandum for Commanding General. November 16, 2017.
- Institute for Water Resources, U.S. Army Corps of Engineers. The Mitigation Rule Retrospective: A Review of the 2008 Regulations Governing Compensatory Mitigation for Losses of Aquatic Resources. [\[https://www.epa.gov/cwa-404/mitigation-rule-retrospective-review-2008-regulations-governing-compensatory-mitigation\]](https://www.epa.gov/cwa-404/mitigation-rule-retrospective-review-2008-regulations-governing-compensatory-mitigation)
- Institute for Water Resources, U.S. Army Corps of Engineers. "National Wetland Mitigation Banking Study: Technical and Procedural Support to Mitigation Banking Guidance." IWR Technical Paper WMB-TP-2. See Chapter Five: "Financial and Legal Assurances." December 1995.
- U.S. Army Corps of Engineers. Flexibility and Clarifications Provided in the Preamble to 33 CFR 332. 2008.
- U.S. Army Corps of Engineers. *Use of Mitigation Banks for U.S. Army Corps of Engineers Civil Works Projects*. Policy Guidance Letter (PGL) No. 46. April 22, 1998.

Models/Examples/Templates:

- U.S. Army Corps of Engineers and Environmental Protection Agency. Model Compensatory Mitigation Plan Checklist for Aquatic Resource Impacts Under the Corps Regulatory Program Pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act.

Articles/Papers/Studies:

- ^Forest Trends Ecosystem Marketplace 2017. State of Biodiversity Mitigation 2017: Markets and Compensation for Global Infrastructure Development. Washington, DC. 92 pp.
- Government Accountability Office. September 2005. *Wetlands Protection: Corps of Engineers Does Not Have an Effective Oversight Approach to Ensure That Compensatory Mitigation Is Occurring*. Washington, DC: GAO. GAO-05-898.
- Ives, Christopher and Sarah Bekessy. 2015. The ethics of offsetting

nature. *Front. Ecol. Environ.* 13 (10):568-573.

- Madsen, Becca, Nathaniel Carroll, Daniel Kandy, and Genevieve Bennett, 2011 Update: State of Biodiversity Markets. Washington, DC: Forest Trends, 2011 [http://www.ecosystemmarketplace.com/reports/2011_update_sbdm]
- Martin, Steven, Robert Brumbaugh, Paul Scodari, and David Olson. March 2006. *Compensatory Mitigation Practices in the U.S. Army Corps of Engineers*. U.S. Army Corps of Engineers Working Paper.
- National Research Council. 2001. *Compensating for Wetland Losses Under the Clean Water Act*. National Academy Press.
- Short, Cathleen. *Mitigation Banking*. U.S. Fish & Wildlife. Serv. Biol. Rep. 88(41). 1988.
- Wilkinson, Jessica and Jared Thompson. *2005 Status Report on Compensatory Mitigation in the United States*. Washington, DC: Environmental Law Institute. April 2006.
- Wilkinson, Jessica, Roxanne Thomas and Jared Thompson. *The Status and Character of In-Lieu Fee Mitigation in the United States*. Washington, DC: Environmental Law Institute. June 2006.

Further Reading:

- Gardner, Royal. C. *Lawyers, Swamps, and Money: US Wetland Law, Policy, and Politics*. Island Press/Center for Resource Economics, 2011.

Training Reference/Other Resources/Tools:

- *Reference Document: "Overview of Federal Mitigation Banking Policy and Regulations"
- EPA Fact Sheets: Wetland Regulatory Authority
- EPA Fact Sheets: Compensatory Mitigation Fact Sheet, revised May 2008
- EPA Fact Sheets: Mitigation Banking Fact Sheet, revised May 2008
- EPA Fact Sheets: Compensatory Mitigation Rule, March 2008

Web Resources:

- EPA Compensatory Mitigation Reports and Evaluations published since 2000: <https://www.epa.gov/cwa-404/compensatory-mitigation-evaluations-and-reports>
- EPA Compensatory Mitigation Web page: <https://www.epa.gov/cwa-404/compensatory-mitigation>

Session 2A: Bank Instrument Documentation

Policy/Guidance/SOPs:

- Institute for Water Resources, U.S. Army Corps of Engineers. May 1996. “National Wetland Mitigation Banking Study: Model Banking Instrument.” Alexandria, VA: USACE, IWR. IWR Technical Paper WMB-TP-1
- New Orleans District, U.S. Army Corps of Engineers. Mitigation SOP, June 2004
- North Dakota. Wetland Mitigation Banking in North Dakota – Interagency Guidance for Mitigation Bank Sponsors – 2010
- Ohio Guidelines for Mitigation Banking, July 2011
- Omaha District, U.S. Army Corps of Engineers. “Guidance for Compensatory Mitigation and Mitigation Banking in Omaha District” August 2005.
<http://www.nwo.usace.army.mil/Portals/23/docs/regulatory/mitigation/200508-MitigationGuide.pdf>
- Sacramento and San Francisco Districts, U.S. Army Corps of Engineers. Mitigation and Monitoring Proposal Guidelines, December 2004
- Savannah District, U.S. Army Corps of Engineers. “Standard Operating Procedure: Compensatory Mitigation.” April 2018.
- Seattle District, U.S. Army Corps of Engineers, Washington Department of Ecology, U.S. Environmental Protection Agency, Region 10. “Wetland Mitigation in Washington State: Part II – Developing Mitigation Plans.” March 2006.
<http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/guidance/index.html>
- Seattle District, U.S. Army Corps of Engineers. Mitigation Bank Instrument Submittal Procedures for Washington State 2013
- South Pacific Division Regional Compensatory Mitigation and Monitoring Guidelines 2015
<http://www.spd.usace.army.mil/Portals/13/docs/regulatory/mitigation/MitMon.pdf>
- St. Paul District, U.S. Army Corps of Engineers. Mitigation Guidance for MN 2009
- *U.S. Army Corps of Engineers and U.S. Environmental Protection Agency. Compensatory Mitigation Rule: Timeline for Bank or ILF Instrument Approval. 2008.
- U.S. Army Corps of Engineers HQ. Mandatory Provision to Include in All Mitigation Bank & ILF Program Instruments July 9, 2014.
- West Virginia Guidance on Mitigation Banking, February 2010
- Wilmington District, U.S. Army Corps of Engineers. “Monitoring Requirements and Performance Standards for Compensatory Mitigation in North Carolina” February 22, 2013.
- Wilmington District, U.S. Army Corps of Engineers. NCIRT Mitigation Review Framework, September 2011

- Wilmington District, U.S. Army Corps of Engineers. “North Carolina Stream Mitigation Guidelines” April 2003.
- Wilmington District, U.S. Army Corps of Engineers. “Use of Stream Preservation as Compensatory Mitigation in North Carolina”. December 2012

Models/Examples/Templates:

- *California 8 Party MOU on Mitigation and Conservation Banking and ILF Programs (2011)
- ^California BEI Template, September 2017.
- *California Mitigation Banking Proposal Procedures, September 2010.
- Charleston District, U.S. Army Corps of Engineers. MBI Template. 2014.
- Charleston District, U.S. Army Corps of Engineers. Prospectus Template. 2010.
- Fort Worth District, U.S. Army Corps of Engineers. MBI Template, 2016
<http://www.swf.usace.army.mil/Missions/Regulatory/Permitting/Mitigation-Templates/>
- Fort Worth District, U.S. Army Corps of Engineers. “Mitigation Plan Template.”
<http://www.swf.usace.army.mil/Missions/Regulatory/Permitting/MitigationTemplates.aspx>
- Fort Worth District, U.S. Army Corps of Engineers. Prospectus Form, 2013
<http://www.swf.usace.army.mil/Missions/Regulatory/Permitting/MitigationTemplates.aspx>
- Iowa Mitigation Banking Package, February 2011
- Missouri Mitigation Banking Instrument Outline for Proposed Banks in the State. January 2010
- Mobile District, U.S. Army Corps of Engineers. Banking Instrument Template, 2016
- Mobile District, U.S. Army Corps of Engineers. Initial Review Checklist
- New Orleans District, U.S. Army Corps of Engineers. Bottomland Hardwood Umbrella Mitigation Work Plan April 2018
- New Orleans District, U.S. Army Corps of Engineers. Checklist for Prospectus Drawings 2016.
- New Orleans District, U.S. Army Corps of Engineers. Post Prospectus Instructions.
- *New Orleans District, U.S. Army Corps of Engineers. Prospectus checklist
- New Orleans District, U.S. Army Corps of Engineers. Umbrella MBI Template, April 2018
- New Orleans District, U.S. Army Corps of Engineers. Umbrella Pine Savanna Mitigation Work Plan September 2017
- Norfolk District, U.S. Army Corps of Engineers. MBI Template, February 2010

- Norfolk District, U.S. Army Corps of Engineers. Prospectus Checklist, Jan 2018
- Portland District, U.S. Army Corps of Engineers. Mitigation Plan Template, 2008
- Portland District, U.S. Army Corps of Engineers. Oregon Mitigation Bank Prospectus, February 2012
- Portland District, U.S. Army Corps of Engineers. Oregon MBI Template, December 2012
- Seattle District, U.S. Army Corps of Engineers. Mitigation Bank Agreement Template 2013
- Seattle District, U.S. Army Corps of Engineers. Prospectus Submittal Procedures and Checklist for Washington State 2013
- St. Paul District, U.S. Army Corps of Engineers. Minnesota Mitigation Bank Instrument Template 2010
- Vicksburg District, U.S. Army Corps of Engineers. Draft MBI Template July 2017.
- Westervelt Ecological Services. Combined Agency Comments from December 2014 and March 2015 on Draft Grasslands BEI, submitted August 1, 2014.
- Westervelt Ecological Services. Grasslands BEI Bank Entitlement Project Schedule.
- Westervelt Ecological Services. Grasslands BEI Document History of Submittals, June 2015.
- Westervelt Ecological Services. Western Region Bank Entitlement Process Improvements 2014-2015.
- Wilmington District, U.S. Army Corps of Engineers. Draft MBI Template December 2016.
- Wilmington District, U.S. Army Corps of Engineers. Prospectus Checklist, May 2012
- Wilmington District, U.S. Army Corps of Engineers. "Stream Mitigation Considerations Checklist." April 2011.
- Wilmington District, U.S. Army Corps of Engineers. "Wetland Mitigation Considerations Checklist." January 2011.
- Wisconsin Template Mitigation Banking Instrument 2011

Training Reference/Other Resources/Tools:

- *Reference Document: "Mitigation Banking and In-Lieu Fee Documentation: From Conceptual Plan to Final Banking Instrument"

Session 2B: Role of Interagency Review Teams (IRTs)

Policy/Guidance/SOPs:

- Oregon IRT Public Notice: Appropriate Use of Public Funds in Species and Wetland Projects January 2008.

Models/Examples/Templates:

- Norfolk District, U.S. Army Corps of Engineers. Internal Bank Establishment SOP, Oct 2009
- Oregon IRT Roles and Responsibilities Agreement, 2013
- West Virginia Department of Environmental Protection and US Army Corps of Engineers. 2008. Agreement Concerning In-Lieu Mitigation Fees. **also listed under Session 7: ILF*
- Wilmington District, U.S. Army Corps of Engineers. NCIRT Review Process for NCEEP Submittals, June 17, 2014
- Wilmington District, U.S. Army Corps of Engineers. Wilmington District NCIRT Mitigation Review Framework, updated September 7, 2011.

Articles/Papers/Studies:

- Ladd. Post-mitigation rule IRTs in New England: overseeing transitions from pre-rule to rule-compliant In-lieu fee programs. National Wetland Newsletter Vol 33(2): 2011.

Training Reference/Other Resources/Tools:

- *Reference Document: "The Composition and Role of IRTs"

Session 2C: Role of State and District Policy and Regulations

Policy/Guidance/SOPs:

- Charleston District, U.S. Army Corps of Engineers. "Guidelines for preparing a Compensatory Mitigation Plan" October 18, 2010.
- Charleston District, U.S. Army Corps of Engineers, *et al.* "Joint State/Federal Administrative Procedures for the Establishment and Operation of Mitigation Banks in South Carolina." September 2002.
- Fort Worth District, U.S. Army Corps of Engineers. "Fort Worth Mitigation Banking Guidance" August 2012.
- Savannah District, U.S. Army Corps of Engineers, "Draft Guidelines on the Establishment and Operation of Wetland and Stream Mitigation Banks in Georgia." 2011

Models/Examples/Templates:

- Chicago District, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, and U.S. Fish and Wildlife Service. “Interagency Coordination Agreement on Wetland Mitigation Banking within the Regulatory Boundaries of Chicago District, Corps of Engineers.” June 2008
- Fort Worth District, U.S. Army Corps of Engineers. “Annual Monitoring Report Form”
- Fort Worth District, U.S. Army Corps of Engineers. “Mitigation Banking in the Fort Worth District.” June 2011.
- Rock Island District, U.S. Army Corps of Engineers. “Rock Island District Wetland Mitigation Monitoring Report (1-5 year)”
- Rock Island District, U.S. Army Corps of Engineers. “Rock Island District Wetland Mitigation Monitoring Report (6-10 year)”
- Seattle District, U.S. Army Corps of Engineers, Washington Department of Ecology, U.S. Environmental Protection Agency, Region 10. “Wetland Mitigation in Washington State: Part I – Agency Policies and Guidance.” March 2006.
- Wilmington District, U.S. Army Corps of Engineers. “Wilmington District NCIRT Mitigation Review Framework – September 2011

Training Reference/Other Resources/Tools:

- *Reference Document: “The Role of State and District Mitigation Banking Policy and Regulations”

Session 3: Ecological Considerations for Bank Site Selection and Design

Policy/Guidance/SOPs:

- *Norfolk District, U.S. Army Corps of Engineers. Virginia Off-site Mitigation Site Location Guidelines. March 5, 2008.
- St. Paul District and MN Bureau of Soil and Water Resources. 2017. Guidance on Evaluating Potential Wetland Preservation Sites for Eligibility to Provide Compensatory Mitigation/Replacement in Minnesota.
- St. Paul District and MN Bureau of Soil and Water Resources. 2016. Guidance for Offsite Hydrology/Wetland Determinations.
- U.S. Army Corps of Engineers. Memo to the Field: Model “Operational Guidelines for Creating or Restoring Wetlands that are Ecologically Self-Sustaining” for Aquatic Resource Impacts Under the Corps Regulatory Program Pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, October 2003.
- Washington State Department of Transportation. Preliminary Wetland Mitigation Site Selection Process” February 2008

Articles/Papers/Studies:

- Ambrose, Richard F., John C. Callaway, and Steven F. Lee. An Evaluation of Compensatory Mitigation Projects Permitted Under Clean Water Act Section 401 by the California State Water Quality Control Board (1991-2002). 2007.
- Ambrose, Richard F. "Wetland Mitigation in the United States: Assessing the Success of Mitigation Policies." *Wetlands (Australia)*. 19: 1-27. 2000.
- Center for Natural Lands Management. Natural Lands Management: 28 Case Studies. 2004.
- Clewell, A., J. Rieger, and J. Munro. 2005. Guidelines for developing and managing ecological restoration projects, 2nd. Edition. Society for Ecological Restoration International. 16 pp.
- Cole, Charles Andrew and Deborah Shafer. 2002. *Section 404 Wetland Mitigation and Permit Success Criteria in Pennsylvania, USA, 1986-1999. Environmental Management*. 30(4): 508-515.
- Environmental Law Institute and The Nature Conservancy. 2014. Watershed Approach Handbook. Washington, DC. 187 pp.
- Environmental Law Institute. 2005 Status Report on Compensatory Mitigation. 2006.
- Environmental Law Institute. A Handbook for Prioritizing Wetland and Stream Restoration and Protection Using Landscape Analysis Tools. Washington, DC. 2013.
- Environmental Law Institute. Banks and Fees: The Status of Off-Site Wetland Mitigation in the United States. 2002.
- Environmental Law Institute. The Status and Character of In-Lieu Fee Mitigation in the United States. 2006.
- Erdle et al. 2001. Conservation Plan for the Southern Watershed Area. Natural Heritage Technical Report #00-12. Virginia Department of Conservation & Recreation. Division of Natural Heritage, Richmond, VA 57pp.+ appendices.
- Flanagan and Richardson. 2010. A Multi-Scale Approach to Prioritize Wetland Restoration for Watershed-Level Water Quality Improvement, *Wetlands Ecol. Manage* 18:695-706.
- Florida Department of Environmental Protection. 2007. Report on Effectiveness of Mitigation Banking in Florida.
- Government Accountability Office. Corps of Engineers Does Not Have an Effective Oversight Approach to Ensure that Compensatory Mitigation is Occurring. 2005.
- Government Accountability Office. Wetlands Protection: Assessments Needed to Determine Effectiveness of In-Lieu-Fee Mitigation. 2001.
- Hill, T, E. Kulz, B. Munoz, J. Dorney. 2013. Compensatory stream and wetland mitigation in North Carolina: an evaluation of Regulatory success. *Environ. Manage*. 51:1077-1091.

- Hruby, Harper, and Stanley. 2009. Selecting Wetland Mitigation Sites Using a Watershed Approach. Washington Dept of Ecology. Ecology Publication #09-06-032
- IUCN. 2004. Biodiversity Offsets: Views, experience, and the business case.
- Kiesecker, J.M., H. Copeland, A. Pocewicz, and B. McKenney. 2009. *Development by design: blending landscape-level planning with the mitigation hierarchy*. Frontiers in Ecology and Environment.
- Kihlslinger, R.L. 2008. Success of Wetland Mitigation Projects. *National Wetlands Newsletter*. 30(2): 14-16. Environmental Law Institute. 2006.
- Micacchion, M, B. Gara, and J Mack. 2010. Assessment of Mitigation Projects in Ohio. Volume 1: An ecological assessment of Ohio individual wetland mitigation projects. Ohio EPA Technical Report WET/2010-1A.
- Minkin, Paul and Ruth Ladd. 2003. Success of Corps-Required Mitigation in New England. USACE New England District.
- Morgan, J and P. Hough, 'Compensatory Mitigation Performance: The State of the Science', *National Wetlands Newsletter*, 37 (2015), 9 p
- Morgan, Kenneth and Thomas Roberts. 1999. *An assessment of wetland mitigation in Tennessee*. Tennessee Department of Environment and Conservation.
- New Jersey Department of Environmental Protection. Creating Indicators of Wetland Status (Quantity and Quality): Freshwater Wetland Mitigation in New Jersey.
- Ohio EPA. 2006. An Ecological Assessment of Ohio Mitigation Banks: Vegetation, Amphibians, Hydrology, and Soils. Ohio EPA Technical Report WET/2006-1.
- PG Environmental and Midwest Biodiversity Institute. 2012. Great Lakes Basin Evaluation of Compensation Sites Report. EPA Contract No. EP-R5-10-02.
- Richardson, C. J., N. E. Flanagan, Mengchi Ho, and J.W. Pahl. 2011. *Integrated stream and wetland restoration: A watershed approach to improved water quality on the landscape*. Ecol. Engineer. 37:25-39
- Smith and Klimas. 2013. A Multi-Scale Approach to Assess and Restore Ecosystems in a Watershed Context. USACE Engineering Research & Development Center. ERDC/EL TR-13-18
- Stefanik, K and W. Mitsch. 2012. Structural and Functional Vegetation Development in created and restored wetland mitigation banks of different ages. Ecol. Engineering 39: 104-112.
- Strager, Anderson, Osbourne, and Fortney. 2010. A Three-Tiered Framework to Select, Prioritize, and Evaluate Potential Wetland and Stream Mitigation Banking Sites. *Wetlands Ecol. Manage.* 19:1-18.
- Walsh, Fletcher and Ladson. Stream Restoration in Urban Catchments Through Redesigning Stormwater Systems: Looking to the Catchment to Save the Stream. The North American Benthological Society. 2005.

- Washington State Department of Ecology. Washington State Wetland Mitigation Evaluation Study, Phase 1: Compliance *and* Phase 2: Evaluating Success. 2000 and 2002.
- Washington State Department of Ecology. Wetlands in Washington State Volume 1: A Synthesis of the Science. Publication #05-06-006. 2005.
- Washington State Department of Ecology. Wetlands in Washington State Volume 2: Guidance for Protecting and Managing Wetlands. Publication #05-06-008. 2005.
- Washington State Department of Ecology and Seattle District Corps of Engineers “Selecting Wetland Mitigation Sites Using a Watershed Approach”
- Widis, D. C., T. BenDor, and M. Deegan. 2015. Prioritizing wetland restoration sites: a review and application to a large-scale coastal restoration program. *Ecol. Rest.* 33(4):358-377.
- Woodruff, S. C. and T. BenDor. 2015. Is information enough? The effects of watershed approaches and planning on targeting ecosystem restoration sites. *Ecol. Rest.* 33(40): 378-387.
- Zedler, J. B., J. M. Doherty, and N. A. Miller. 2012. Shifting restoration policy to address landscape change, novel ecosystems, and monitoring. *Ecology and Society* 17(4) 36.

Further Reading:

- National Academy of Sciences. 2001. Compensating for Wetland Losses Under the Clean Water Act. <http://www.nap.edu/books/0309074320/html/>

Training Reference/Other Resources/Tools:

- *Reference Document: “Ecological Considerations for Mitigation Bank and In-Lieu Fee Program Site Selection and Design”
- Environmental Protection Agency. 2017. EnviroAtlas Interactive Map User Guide. 47pp.
- Map Viewing Resources on the Internet

Web Resources:

- EPA’s EnviroAtlas: <https://www.epa.gov/enviroatlas>

RIBITS: Demonstration & Exercise

Training Reference/Other Resources/Tools:

- Credit Classifications (2018)
- Finding Credits (2018)
- *Getting Started with RIBITS (2018)
- Reporting Tools (2018)

- *RIBITS Demo & Exercise Outline
- Understanding the Credit Ledger (2018)
- Understanding the ILF Advance Credit Ledger (2018)

Session 4: Site Protection Instruments

Policy/Guidance/SOPs:

- Portland District, U.S. Army Corps of Engineers. Public Notice Long Term Protection of Mitigation Projects March 2011
- Savannah District, U.S. Army Corps of Engineers. “Standards for Qualified Conservation Easements.” Undated
- Wilmington District, U.S. Army Corps of Engineers. “Wilmington District Process for Preservation of Mitigation Property.” November 25, 2003.

Models/Examples/Templates:

- Alaska Mental Health Trust Authority Quitclaim deed 2015.
- California Conservation Easement Template. March 2017. **also listed under Session 11a: Conservation Banks*
- Charleston District, U.S. Army Corps of Engineers and US Forest Service. 2013, Conservation Land Use Agreement Francis Marion and Sumter National Forests.
- Charleston District, U.S. Army Corps of Engineers. “Charleston District Conservation Easement Model.” September 2010.
- Charleston District, U.S. Army Corps of Engineers. “Charleston District Model Restrictive Covenants.” September 2010.
- Eagle River Signed and Recorded Non Development Covenant 2014
- Fort Worth District Conservation Easement Template Agreement 2014.
- Los Angeles District, U.S. Army Corps of Engineers. Conservation Land Use Agreement Between Arizona Game and Fish Department and Los Angeles District (undated)
- Medina SWCD Stewardship Endowment Formula Example
- Michigan Department of Environmental Quality. “Conservation Easement Checklist.” November 7, 2007.
- Minnesota Conservation Easement Template
- Mobile District, U.S. Army Corps of Engineers. “Model Mitigation Bank Conservation Easement.” Undated.
- New Orleans District, U.S. Army Corps of Engineers. Conservation Servitude Template – April 2009

- New York Conservation Model Easement Template. 2017.
- Norfolk District, U.S. Army Corps of Engineers. “Declaration of Restrictions.”
- Norfolk District, U.S. Army Corps of Engineers. NAS Oceana Settlement Agreement
- Norfolk District, U.S. Army Corps of Engineers. “Project Manager Declaration of Restrictions Checklist”
- Ohio Model Conservation Easement Template. 2017.
- Omaha District, U.S. Army Corps of Engineers. “Conservation Easement for Mitigation Banks – Template.” Undated.
- Sacramento District, U.S. Army Corps of Engineers. Beale AFB Conservation land use agreement
- Sacramento, San Francisco, and Los Angeles Districts, U.S. Army Corps of Engineers. Conservation Easement Template, March 2017.
- *Sacramento, San Francisco, and Los Angeles Districts, U.S. Army Corps of Engineers. “Property Assessment and Warranty Standard Template.” July 2009.
- Sacramento, San Francisco, and Los Angeles Districts, U.S. Army Corps of Engineers. Subordination Agreement Template
- Savannah District, U.S. Army Corps of Engineers. “Amendments to Declaration of Covenants and Restrictions.” January 7, 2004.
- *Savannah District, U.S. Army Corps of Engineers. Conservation Land Use Agreement, December 2009
- *Savannah District, U.S. Army Corps of Engineers. In-Lieu Fee CLU Agreement Model, 2010
- Savannah District, U.S. Army Corps of Engineers. “Instructions for Using the Model Declaration of Covenants and Restrictions with Permit Applications.” January 7, 2004.
- Savannah District, U.S. Army Corps of Engineers. Mitigation Bank Checklist
- Savannah District, U.S. Army Corps of Engineers. Model Conservation Land Use Agreement
- *Savannah District, U.S. Army Corps of Engineers. “Model Declaration of Covenants and Restrictions.” October 15, 2008
- Savannah District, U.S. Army Corps of Engineers. Multi-Party Conservation Land Use Agreement Sample
- Savannah District, U.S. Army Corps of Engineers. USFS multiple party agreement
- Seattle District, U.S. Army Corps of Engineers. Conservation Easement Template. 2016.

- The Nature Conservancy V. Sims. 2012. Us. 6th District Court of Appeals.
- Wilmington District, U.S. Army Corps of Engineers. “Model Conservation Easement for 404 Mitigation Banks.”
- Wisconsin Conservation Easement Template

Articles/Papers/Studies:

- Bonneville Power Administration. The Fish and Wildlife Lands Deskbook: Bonneville Power Administration’s Deskbook for Fish and Wildlife Acquisition, Enhancement, Monitoring, and Enforcement Projects, November 2016.
- Gardner and Radwan. 2009. Corporate shell games: LLPs, LLCs, and responsibility for mitigation sites. National Wetlands Newsletter. Vol. 31 No. 6 pp 6-11.
- General Services Administration. Memo on Restrictive Covenants on government lands – 1998
- Johnson, B. S. 2016. Five tips to expedite the regulatory review process for conservation easements. National Wetland Newsletter. 11-12.
- Land Trust Alliance. 2017. List of Accredited Land Trusts. Savingland. Magazine Spring 2017. 76-78.
- O’Donnell, M. K. 2016. What title reveals that the land itself cannot. Savingland. Land Trust Alliance newsletter. Summer 2016: 24-27.
- Raffini, Eric. 2012. *Mineral Rights and Banking*. National Wetlands Newsletter 34(5): 9-10.
- Terzi, G. 2012. The Lummi Nation Wetland and Habitat Bank – Restoring a Piece of History. National Wetland Newsletter. 34(6): 12-13.
- ^Wood, C. and S. Martin. 2016. Compensatory mitigation site protection instrument handbook for the Corps Regulatory Program. Institute for Water Resources. 25pp.
- Wood, Cynthia. 2013. *Site Protection Instruments for Compensatory Mitigation*. National Wetlands Newsletter 35: 8.

Training Reference/Other Resources/Tools:

- *Reference Document: “Real Estate Protection Instruments”
- CO Open Lands. Worksheet Calculating Stewardship and Conservation Easement Costs and Endowment
- Department of Defense. Integrated Natural Resource Management Plans Factsheet. 2010

- Department of Defense. Integrated Natural Resource Plan Manual. 2013. Number 4715.3
- The Nature Conservancy. The Nature Conservancy Stewardship Costs Calculator. 2016.
- The Nature Conservancy. The Nature Conservancy Stewardship Costs Calculator Accompanying Handbook. 2016.

Session 5: The Business of Banking

Articles/Papers/Studies:

- BenDor, T. K., J. A. Riggsbee, M. Doyle. 2011. Risks and markets for ecosystem services. *Environ. Sci. and Tech.* 45:1032-10330
- BenDor, T. K., J. A. Riggsbee, G. Howard. 2010. A survey of mitigation banker perceptions and experiences. *National Wetlands Newsletter.* 32(3):11-15.
- Denisoff, C. R. "Business Considerations". Pp. 109-126, *In: N. Carroll, J Fox and R. Bayon (eds). Conservation and Biodiversity Banking: a Guide to Setting up and Running Biodiversity Credit Trading Systems.* Earthscan. 2008.
- Denisoff, Craig and Greg DeYoung. "The Challenge of Implementing Market-Based Programs by Regulatory Agencies." *National Wetlands Newsletter*, Vol. 33, No. 4 (2011).
- Denisoff, Craig and David Urban. "Evaluating the Success of Wetland Mitigation Banks." *National Wetlands Newsletter.* Vol. 34. No. 4 (2012): p 8-11
- Denisoff, Craig. "Reconciling Watersheds and Ecoregions: What's in a Number?" *National Wetlands Newsletter.* Vol. 33. No. 1 (2011): p 7-8.
- Denisoff, Craig. "The Bankers Perspective on the Prospectus" *National Wetlands Newsletter.* Vol. 34. No. 1 (2012): p 8-9.
- Gardner, R. C. 2015. Mitigation enforcement, breach of contract, and the law of unintended consequences. *National Wetland Newsletter.* 37(2):11-15.
- Hook, Patrick and Spenser Shadle. "Navigating Wetland Mitigation Markets: a Study of Risks Facing Entrepreneurs and Regulators." *Ecosystem Marketplace, The Katoomba Group*, 23 Jan. 2014.
- Lashley, Douglas. 2014. Mitigation Banking: A sustainability Tool Here to Stay. *Real Estate Review* 43(3):25-36
- Levrel, H., P. Scemama, A-C. Vaissiere. 2017. Should we be wary of mitigation banking? Evidence regarding the risks associated with this offset arrangement in Florida. *Ecol. Economics.*135: 136-149
- Robertson, Morgan. 2009. The work of wetland credit markets: two cases in entrepreneurial wetland banking. *Wetlands Ecol. Manage.* 17:35-51.
- Shabman, Leonard and Paul Scodari. "The Future of Wetlands Mitigation Banking." *Choices* Vol. 20(1): 2005: p 65-70.

Further Reading:

- Carroll, Nathaniel and Jessica Fox and Ricardo Bayon. Conservation and Biodiversity Banking: A Guide to Setting Up and Running Biodiversity Credit Trading Systems (Environmental Market Insights. EarthScan, 2008.

Session 6: Service Area Determination

Policy/Guidance/SOPs:

- Code of Virginia. Title 62.1-44.15:23. Wetland and stream mitigation banks.
- Mobile District, U.S. Army Corps of Engineers. Proximity Factor Method, April 2009
- Sacramento District, U.S. Army Corps of Engineers. Service Area Guidelines October 2010.
- Washington State. Washington State Wetland Mitigation Bank Service Area Guidance.

Models/Examples/Templates:

- Habitat Bank LLC. 2016. Coweeman Bank MBI Appendix E Procedures for use of mitigation bank credits and debits..
- Westervelt Ecological Services. 2016. Exhibit B-2. Narrative Description of the Bank's Service Area from Bullock Bend BEI.

Articles/Papers/Studies:

- Amato, Brumbaugh, Deyoung, Doyle, Holland, and Martin. 2013. *Policy Forum Discussion: Service Areas*. National Wetland Newsletter. 35:9-17.
- BenDor, Todd, Joel Sholtes and Martin Doyle. 2009. Landscape characteristics of a stream and wetland mitigation banking program. *Ecological Applications* 19(8): 2078-2092
- Denisoff. 2011. Reconciling Watersheds and Ecoregions: What's in a Number? *National Wetlands Newsletter*. 33(1):7-8.
- Higgins, J. V. M. T. Breyer, M. L. Khoury, and T. W. Fitzhugh. 2005. A freshwater classification approach for biodiversity conservation planning. *Conservation Biology*. 19(2): 432-445.
- Omernik and Bailey. 1997. Distinguishing Between Watersheds and Ecoregions. *J. of Am. Water Res. Assn.* 33(5): 935-949.
- Ruhl and Salzman. 2006. The Effects of Mitigation Banking on People. *National Wetlands Newsletter*. 28(2):2-13.
- Sowa, S. P., G. Annis., M. Morey, D. R. Diamond, 2003. Classifying stream ecosystems into distinct ecological units at multiple spatial scales. Powerpoint from USGS National Gap Analysis meeting. 27pp.
- *Womble, P. and M. Doyle. *Setting geographic service areas for compensatory mitigation banking*. *National Wetlands Newsletter* Aug-Sept 2010. Pp 18-23

- Womble, P. and M. Doyle. *The Geography of Trading Ecosystem Services: A Case Study of Wetland and Stream Compensatory Mitigation Markets*. Harvard Env. Law Review. 36:229-296 + app.

Training Reference/Other Resources/Tools:

- *Reference Document: "Service Area Determination"

Session 7: In-Lieu Fee Mitigation

Policy/Guidance/SOPs:

- Washington Dept. of Ecology. Guidance on In-Lieu Fee Mitigation. 2012.

Models/Examples/Templates:

- Coachella Valley ILF Program Instrument 2014.
- Coastal Mississippi ILF Instrument, January 2010
- Cumberland River Compact Stream Restoration ILF Program Instrument. 2018
- Everglades National Park ILF Program Instrument. 2015.
- Georgia Land Trust. In-Lieu Fee Program Instrument, 2013.
- Georgia Land Trust. Minor In-Lieu Fee Instrument Modification Letter, February 2014.
- Georgia Land Trust. Minor In-Lieu Fee Instrument Modification Letter, 2016.
- Great Land Trust ILF Program Prospectus, August 2010
- Hood Canal Coordinating Council ILF Basic Program Instrument 2012
- Hood Canal Coordinating Council ILF Compensation Planning Framework and Technical Appendices 2012
- Hood Canal Coordinating Council ILF Exhibits 2012
- Indiana Stream & Wetland ILF Program Instrument. 2018.
- Inland Empire Resource Conservation District ILF Instrument. 2018.
- Kansas Watershed Land Trust ILF Instrument 2013
- Kentucky Department of Fish & Wildlife Resources ILF Instrument, Dec 2011
- Kentucky Department of Fish & Wildlife Resources ILF Public Notice, November 2010
- Kentucky ILF Complete Application Checklist
- Kentucky ILF Concept Plan Checklist
- Kentucky ILF Early Coordination Checklist
- Kentucky ILF Fee Program Information

- Kentucky ILF Final Public Notice for LOP
- Kentucky ILF Forward Early Coordination Agency Comments
- Kentucky ILF General Conditions
- Kentucky ILF Intent to Approve Mod Email
- Kentucky ILF Intent to Use LOP & Initiation IRT Consultation email
- Kentucky ILF LOP Implementation Process
- Kentucky ILF Mitigation LOP Public Notice
- Kentucky ILF Modification Approval and Letter of Permission February 2017
- Kentucky ILF Mod Approval & Authorization Letter
- Kentucky ILF Mod Approval Email
- Kentucky ILF Notification of 14 Day Early Coordination Period Email
- Kentucky ILF Statement of Findings
- King County Mitigation Reserves Program Instrument, Signed 2012
- King County Mitigation Reserves Program Instrument Appendices 2012
- La Paz County ILF MOA Policy and Annual Reports
- La Paz County ILF MOA
- La Paz County ILF Program Instrument 2013
- Los Angeles District, U.S. Army Corps of Engineers. ILF Program Template Instrument 2012.
- Los Angeles District, U.S. Army Corps of Engineers. ILF Prospectus Checklist, March 2011
- Los Angeles District, U.S. Army Corps of Engineers. Guidance on Developing ILF Compensation Planning Framework 2012.
- Maine Atlantic Salmon Restoration & Conservation Program. Compensation Rate Calculations and Fee Schedule. 2016.
- Maine Department of Environmental Protection. ILF Fact Sheet 2015
- Maine Department of Transportation, FHWA, and New England District US Army Corps of Engineers. 2016. Programmatic Biological Assessment for Transportation Projects for Gulf of Maine Atlantic Salmon
- Maine Natural Resources Conservation Program (NRCP) 2013 Annual Report
- Maine Natural Resources Conservation Program (NRCP) 2014 Funding Allocations
- Maine Natural Resources Conservation Program (NRCP) 2015 Request for Letters of Intent Package

- Maine Natural Resources Conservation Program (NRCP) ILF Instrument, Aug 2011
- Maine Natural Resources Conservation Program (NRCP) Management Plan Template
- Massachusetts Department of Fish and Game ILF 2014 Annual Report
- Massachusetts Department of Fish and Game ILF Prospectus 2012
- Missouri Stream Stewardship ILF Program Instrument 2013
- National Fish & Wildlife Foundation ILF Program Enabling instrument
- National Fish & Wildlife Foundation ILF Program Exhibit A: ILF Program Area
- National Fish & Wildlife Foundation ILF Program Exhibit B: Service Areas
- National Fish & Wildlife Foundation ILF Program Exhibit C: Credit Establishment and Tracking
- National Fish & Wildlife Foundation ILF Program Exhibit D: Compensation Planning Framework
- National Fish & Wildlife Foundation ILF Program Exhibit E: ILF Project Development Process
- National Fish & Wildlife Foundation ILF Program Exhibit F: Program Account
- National Fish & Wildlife Foundation ILF Program Exhibit F – Amendment 2. January 2017
- New Hampshire Aquatic Resource Mitigation (ARM) Fee Calculator, 2017
- New Hampshire Aquatic Resource Mitigation (ARM) ILF Program Instrument, 2012.
- New Hampshire Aquatic Resource Mitigation (ARM) Project Approvals 2014
- North Carolina Ecosystem Enhancement Program (NCEEP) Instrument. July 2010.
- Northwest Florida Water Management District ILF Program Instrument. 2015
- Ohio Wetland Foundation ILF Instrument 2014
- Oregon Department of State Lands. ILF Instrument Modification Exhibits (includes Compensation Planning Framework), 2012
- Oregon Department of State Lands. ILF Instrument, approved February 2009
- Oregon Department of State Lands. Modified ILF Program Instrument, approved April 2012
- Pierce Co ILF Appendices
- Pierce Co ILF Exhibit 6 Credit Pricing Analysis
- Pierce Co ILF Instrument
- Pittsburgh District, U.S. Army Corps of Engineers. LaMothe Hollow ILF project approval letter June 2013.

- Prescott Creeks Preservation Association ILF Program Prospectus 2012
- Quil Ceda Village ILF Appendix S Maps
- Quil Ceda Village ILF Compensation Planning Framework and Appendices
- Quil Ceda Village ILF Program Instrument 2013
- Riverside Corona Compensation Planning Framework
- Riverside Corona ILF Instrument
- Riverside Corona RS RCD Altfillisch Long-term management plan
- Santa Ana River Watershed Association of Resource Conservation Districts ILF Program, October 2009
- Southeast Alaska Watershed Coalition In-Lieu Fee Program Instrument. 2017.
- Tennessee National Wildlife Federation ILF Instrument, Nov 2011
- Tennessee Stream Mitigation Program ILF Instrument May 2013
- The Land Learning Foundation: In-Lieu Fee Mitigation Program Final Instrument, February 2015.
- TNC Ohio Stream and Wetland In-Lieu Fee Mitigation Program Compensation Planning Framework.
- TNC Ohio Stream and Wetland In-Lieu Fee Mitigation Program Instrument
- Vermont ILF instrument (Ducks Unlimited) January 2011
- Virginia Aquatic Resources Trust Fund (VARTF) 2014 Annual Report - Credit Balances
- Virginia Aquatic Resources Trust Fund (VARTF) 2014 Annual Report - Project Summaries
- Virginia Aquatic Resources Trust Fund (VARTF) 2014 Annual Report
- Virginia Aquatic Resources Trust Fund (VARTF) 2014 Project Sites map
- Virginia Aquatic Resources Trust Fund (VARTF) ELI Program Audit Report
- Virginia Aquatic Resources Trust Fund (VARTF) Fee Schedule
- Virginia Aquatic Resources Trust Fund (VARTF) HW Final Communication Letter
- Virginia Aquatic Resources Trust Fund (VARTF) HW Final Management Letter
- Virginia Aquatic Resources Trust Fund (VARTF) HW Final Statement
- Virginia Aquatic Resources Trust Fund (VARTF) Program Compensation Planning Framework
- Virginia Aquatic Resources Trust Fund (VARTF) Program Instrument, July 2011

- Virginia Aquatic Resources Trust Fund (VARTF) Standard Operating Procedures 2013
- Virginia Aquatic Resources Trust Fund (VARTF)TNC Program Audit Proposal 12.15.15
- West Virginia Department of Environmental Protection and US Army Corps of Engineers. 2008. Agreement Concerning In-Lieu Mitigation Fees.
- Wisconsin Wetland Conservation Trust ILF Program Instrument. 2014.Land Learning Foundation ILF Program Instrument 2015.

Articles/Papers/Studies:

- Kihlsinger, Woolsey, and Gaudioso. 2014. Establishing In-Lieu Fee Programs: Identifying Opportunities and Overcoming Challenges. National Wetlands Newsletter. 36(4):8-13
- Ladd. 2011. Post-mitigation rule IRTs in New England: overseeing transitions from pre-rule to rule-compliant In-lieu fee programs. National Wetland Newsletter Vol 33(2): 9-10
- Stephenson, K. and B. Tutko. 2016. The roel of In-Lieu Fee programs in providing off-site compensatory mitigation. Final Report for Office of Environmental Markets, USDA. 32 pp.
- Wilkinson, J. 2009. *In-Lieu fee mitigation: Coming into compliance with the new Compensatory Mitigation Rule*. Wetland Ecology and Management. 17:53-70.

Training Reference/Other Resources/Tools:

- *Reference Document: "In-Lieu Fee Mitigation"
- *Advance crediting summary
- Environmental Law Institute. In-Lieu Fee Mitigation: Model Instrument Language and Resources. December 2009.

Session 8: Short-Term Financial Assurances

Policy/Guidance/SOPs:

- Florida Department of Environmental Protection. Form No. 62-330301(3). "Mitigation Bank Standby Trust Fund Agreement to Demonstrate Perpetual Management." Effective October 2013.
- Florida Department of Environmental Protection. Form No. 62-342.900(3). "Mitigation Bank Standby Trust Fund Agreement to Demonstrate Construction and Implementation Financial Assurance." Effective May 21, 2001.
- Florida Department of Environmental Protection. Form No. 62-342.900(4). "Mitigation Bank Trust Fund Agreement to Demonstrate Construction and Implementation Financial Assurance." Effective May 21, 2001.

- Florida Department of Environmental Protection. Form No. 62-342.900(5). "Mitigation Bank Trust Fund Agreement to Demonstrate Perpetual Management Financial Assurance." Effective May 21, 2001.
- Florida Department of Environmental Protection. Rules on Financial Responsibility
- Fort Worth District, U.S. Army Corps of Engineers. Financial Assurance Guidance. 2013
- Fort Worth District, U.S. Army Corps of Engineers. Specimen Casualty Insurance Policy for Mitigation Banks. 2012.
- Institute for Water Resources, U.S. Army Corps of Engineers. "National Wetland Mitigation Banking Study: Technical and Procedural Support to Mitigation Banking Guidance." IWR Technical Paper WMB-TP-2. *see *Chapter 5: Financial and Legal Assurances*. December 1995.
- Institute for Water Resources, U.S. Army Corps of Engineers. Verification of financial assurance estimates. White Paper, 2017.
- Los Angeles District, U.S. Army Corps of Engineers. Standard Operating Procedures for Financial Assurances, 2009.
- Seattle District, U.S. Army Corps of Engineers. Standby Trust Agreement for Mitigation Banking
- U.S. Army Corps of Engineers. *Guidance on the Use of Financial Assurances, and Suggested Language for Special Conditions for Department of the Army Permits Requiring Performance Bonds*. Regulatory Guidance Letter No. 05-1, February 14, 2005.
- U.S. Army Corps of Engineers. Memo: Financial Assurance Instruments for Compensatory Mitigation under the Corps Regulatory Program, December 1, 2011
- U.S. Code 31. Section 3302. Custodians of Money (Miscellaneous Receipts).

Models/Examples/Templates:

- Baltimore District, U.S. Army Corps of Engineers. Escrow Agreement
- Chicago District, U.S. Army Corps of Engineers. Sample Irrevocable Letter of Credit
- Los Angeles District, U.S. Army Corps of Engineers. Model Performance Bond
- Minnesota Performance Bond Template
- New England District, U.S. Army Corps of Engineers. Checklist for Performance Bond Completeness 2007.
- New Orleans District, U.S. Army Corps of Engineers. Template Escrow Agreement
- Norfolk District, U.S. Army Corps of Engineers. Template Escrow Agreement
- Wilmington District, U.S. Army Corps of Engineers. Letter of Credit Template, 2017.

- Wilmington District, U.S. Army Corps of Engineers. Performance Bond Template. December 2016.

Articles/Papers/Studies:

- Boyd, James. Financial Responsibility for Environmental Obligations: Are Bonding and Assurance Rules Fulfilling Their Promise? (2001)
- Gardner, Royal C. and Theresa J. Pulley Radwan. "What Happens When a Wetland Mitigation Bank Goes Bankrupt?" *National Wetlands Newsletter*. Vol. 28, No. 4. Environmental Law Institute, July-August 2006.
- NASBP and SFAA. 2012. Surety Bonds at Work.
- Scodari, P. S. Martin, & A. Willis. 2016. Implementing Financial Assurances For Mitigation Project Success. Institute for Water Resources White Paper.

Training Reference/Other Resources/Tools:

- *Reference Document: "Financial Assurances – Remedial and Long-Term"

Web Resources:

- Los Angeles District, U.S. Army Corps of Engineers. "Recommended Bond Surety Companies." Undated.
<http://www.fiscal.treasury.gov/fsreports/ref/suretyBnd/c570.htm>

Session 9A: Wetland Credit Determination

Policy/Guidance/SOPs:

- Charleston District, U.S. Army Corps of Engineers. Guidelines for Preparing Compensatory Mitigation Plans, Oct 2010
- Chicago District, U.S. Army Corps of Engineers. Mitigation Requirements, Oct 2009
- Galveston District, U.S. Army Corps of Engineers. "SWG-Standard Operating Procedures (SOP); Using HGM to Determine Potential Wetland Functions and the Appropriate Compensatory Mitigation for Unavoidable Wetland Impacts" September 2008.
- Savannah District, U.S. Army Corps of Engineers. Savannah District's 2018 Standard Operating Procedure for Compensatory Mitigation
- Seattle District, U.S. Army Corps of Engineers. Credit Guide. Feb 2013.
- South Pacific Division, U.S. Army Corps of Engineers. SOP for Determination of Mitigation Ratios.
- St. Paul District, U.S. Army Corps of Engineers and Wisconsin Department of Natural Resources. "Guidelines for Wetland Compensatory Mitigation in Wisconsin." pp. 15-18. February 2002.
- U.S. Army Corps of Engineers, Engineer Research and Development Center (ERDC). A Regional Guidebook for Applying the Hydrogeomorphic Approach to

Assessing Wetland Functions of Forested Wetlands in Alluvial Valleys of the Coastal Plain of the Southeastern United States. April 2013.

- ^U.S. Army Corps of Engineers. Public Notice: Wetland Mitigation Banking in OH, March 2010

Models/Examples/Templates:

- A.S.H. Mitigation Bank, LLC “Ash Slough Headwaters Mitigation Bank Addendum I Banking Instrument” undated.
- Delaware Department of Natural Resources (DNR). DERAP Forms.
- Delaware Department of Natural Resources (DNR). DERAP Value Protocol.
- Delaware Department of Natural Resources (DNR). DERAP Field Protocol.
- Florida Uniform Mitigation Assessment Method (UMAM) Overview
- Fort Worth and Tulsa District, U.S. Army Corps of Engineers. “The Texas Rapid Assessment Method (TXRAM) Wetland and Streams Modules” October 2010.
- Galveston District, U.S. Army Corps of Engineers. “Riverine Forested HGM Interim” undated.
- KBA EnviroScience, “Rockin’ K on Chambers Creek Mitigation Banking Instrument” December 2014.
- Maine Department of Transportation. Maine DOT Umbrella Mitigation Banking Instrument, August 2011.
- Mobile District, U.S. Army Corps of Engineers. “Ratio Method.” Undated.
- New England District, U.S. Army Corps of Engineers. Compensatory Mitigation Ratios, 2016
- New Orleans District, U.S. Army Corps of Engineers. Louisiana Rapid Assessment Method (LRAM)
- Norfolk District, U.S. Army Corps of Engineers and Virginia DEQ. Template Mitigation Banking Instrument, 2010
- Northern Kentucky University, Center for Applied Ecology. Red Stone Farm Wetland Mitigation Bank Instrument, Pike County, Ohio, January 2007
- *Ohio Environmental Protection Agency. Mitigation & Monitoring Plan Checklist
- South Pacific Division, U.S. Army Corps of Engineers. Examples for Mitigation Ratio Setting Checklists.
- SWCA Environmental Consultants, “Mitigation Banking Instrument Gin City Mitigation Bank Harris County Texas SWG-2011-01182” February 2014.
- SWCA Environmental Consultants, “Mitigation Banking Instrument Gin City Mitigation Bank Harris County Texas SWG-2011-01182, Attachments A & B” February 2014.

Articles/Papers/Studies:

- Fennessy, Siobhan. "Evaluating Mitigation Performance: Functional and Condition Based Assessment Methods." National Wetlands Newsletter, Volume 33, No. 2, 2011.
- Lonard et al. Analysis of Methodologies Used for the Assessment of Wetlands Values. September 1981.
- Stein, Brinson, Rains, Kleindl, and Hauer. 2009. Wetland Alphabet Soup: How to Choose (or Not Choose) the Right Assessment Method. Wetland. Sci. Practice. 26(4):20-25.

Training Reference/Other Resources/Tools:

- *Reference Document: "Wetland Credit Determination"
- Florida Unified Mitigation Assessment Method (UMAM) Training Manual
- Georgia Interim Freshwater Wetland HGM Workbook May 2018
- Georgia Freshwater Wetland Qualitative Assessment May 2018.
- North Carolina WAM: Key to Wetlands
- North Carolina WAM
- Washington State Department of Ecology. Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington, March 2012.

Session 9B: Stream Credit Determination

Policy/Guidance/SOPs:

- Charleston District, U.S. Army Corps of Engineers. "Compensatory Mitigation Standard Operating Procedure. September 19, 2002"
- Huntington District, U.S. Army Corps of Engineers. West Virginia IRT Initiatives Guidance. 2010.
- Huntington District, U.S. Army Corps of Engineers. West Virginia Stream and Wetlands Valuation Metric (SWVM) Instructional Guide.
- Huntington District, U.S. Army Corps of Engineers. West Virginia Stream and Wetlands Valuation Metric (SWVM).
- Little Rock District, U.S. Army Corps of Engineers. Stream Method 2011
- Mobile District, U.S. Army Corps of Engineers. "Standard Operating Procedure (SOP), Compensatory Stream Mitigation Guidelines." 2012.
- New England District, U.S. Army Corps of Engineers. Proposed Revision of New England District Compensatory Mitigation Guidance. 2015.
- South Pacific Division, U.S. Army Corps of Engineers. 12501: SOP for the Determination of Mitigation Ratios.

- U.S. Army Corps of Engineers, Regulatory Branch and Environmental Protection Agency, Wetlands Division. "Stream Mitigation Compendium," National Wetlands Mitigation Action Plan. 2004.
- U.S. Army Corps of Engineers. Operational Draft Regional Guidebook for the Functional Assessment of High Gradient Ephemeral and Intermittent Headwater Streams in Western West Virginia and Eastern Kentucky. ERDC EL TR-10-11, 2010.
- U.S.D.A. Natural Resource Conservation Service (NRCS). Stream Visual Assessment Protocol Version 2. 2009.
- U.S. Environmental Protection Agency. Stream Assessment and Mitigation Protocols: A Review of Commonalities and Differences, May 2010
- Wilmington District, U.S. Army Corps of Engineers and North Carolina Department of Environment and Natural Resources. "Information Regarding Stream Restoration with Emphasis on the Coastal Plain." April 4, 2007.
- Wilmington District, U.S. Army Corps of Engineers, North Carolina Division of Water Quality, U.S. Environmental Protection Agency, Region IV, Natural Resources Conservation Service, and the North Carolina Wildlife Resources Commission. "Stream Mitigation Guidelines." April 2003.

Web Resources:

- U.S. Fish & Wildlife Service:
<https://www.fws.gov/chesapeakebay/stream/protocols.html>

Models/Examples/Templates:

- Nebraska Stream Assessment Procedure (Interim) 2012.
- Norfolk District, U.S. Army Corps of Engineers and Virginia Department of Environmental Quality. "Unified Stream Methodology for use in Virginia." January 2007.
- Omaha District, U.S. Army Corps of Engineers. Wyoming Stream Mitigation Procedure. 2013.
- Pennsylvania DEP. Pennsylvania Function Based Aquatic Resource Compensation Protocol Draft Version 1.
- South Pacific Division, U.S. Army Corps of Engineers. 12501.1: Mitigation Ratio Checklist.
- South Pacific Division, U.S. Army Corps of Engineers. 12501.2: Instructions for Preparing Mitigation Ratio Setting Checklist.
- South Pacific Division, U.S. Army Corps of Engineers. 12501.3: Mitigation Ratio Checklist Examples.
- Texas Rapid Assessment Method (TXRAM) Stream Data Sheet
- Texas Rapid Assessment Method (TX RAM) Stream Scoring Sheet
- Texas Rapid Assessment Method (TX RAM) Wetland and Stream Modules

Articles/Papers/Studies:

- Environmental Law Institute. A Function Based Review of Stream Restoration Science. 2016.
- Environmental Law Institute. Assessing Stream Mitigation Guidelines at the Corps District and State Levels. 2016.
- Environmental Law Institute. Assessing Stream Mitigation Practice. 2016.
- Fischenich, J. Craig. "Functional Objectives for Stream Restoration", EMRRP, September 2006
- Harman, W., R. Starr, M. Carter, K. Tweedy, M. Clemmons, K. Suggs, C. Miller. *A Function-Based Framework for Stream Assessment and Restoration Projects*. US Environmental Protection Agency, Office of Wetlands, Oceans, and Watersheds, Washington, DC. 2012.
- Harman, W., R. Starr. Natural Channel Design Review Checklist. US Fish and Wildlife Service, Chesapeake Bay Field Office, Annapolis, MD and US Environmental Protection Agency, Office of Wetlands, Oceans, and Watersheds, Wetlands Division. Washington, DC. 2011.
- Somerville, D.E. and B.A. Pruitt. *Physical Stream Assessment: A Review of Selected Protocols for Use in the Clean Water Act Section 404 Program*. Prepared for the U.S. Environmental Protection Agency, Office of Wetlands, Oceans, and Watersheds, Wetlands Division (Order No. 3W-0503-NATX). Washington, D.C. 213 pp. September 2004.
- Yochum, Steven E. Guidance for Stream Restoration and Rehabilitation. Technical Note TN-102.2. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, National Stream & Aquatic Ecology Center, 2016.

Web Resources:

- Environmental Law Institute (ELI): The State of Stream Compensatory Mitigation: Science, Policy, and Practice <http://www.eli.org/compensatory-mitigation/state-stream-compensatory-mitigation-science-policy-and-practice>

Training Reference/Other Resources/Tools:

- *Reference Document: "Stream Credit Determination"
- California Rapid Assessment Method (CRAM) Manual. 2013.
- California Rapid Assessment Method (CRAM) Riverine Field Book. 2013.
- Georgia Stream Qualitative Assessment May 2018
- Georgia Stream Quantification Tool. May 2018
- Georgia Qualitative Worksheet for Stream Adverse Impacts May 2018
- Huntington District, U.S. Army Corps of Engineers. West Virginia Stream and Wetlands Valuation Metric (SWVM) Metric Worksheet.
- North Carolina Stream Assessment Method (NC SAM) Field Form
- North Carolina Stream Assessment Method (NC SAM) Rating Calculator

- North Carolina Stream Assessment Method (NC SAM) Version 2. 2014
- Nebraska Stream Assessment and Mitigation Procedure Calculation Spreadsheet (NeSCAP Calcbook). 201s
- South Pacific Division, U.S. Army Corps of Engineers. 12501.4: Before/After-Mitigation-Impact Spreadsheet – Step 3 BAMI.
- South Pacific Division, U.S. Army Corps of Engineers. 12501.5: Mitigation Ratio Training Presentation.
- South Pacific Division, U.S. Army Corps of Engineers. 12501.6: Mitigation Ratio Checklist in Excel format.
- Stream Mechanics. DRAFT Stream Function Quantification Tool. 2014.
- Stream Mechanics. Stream Functions Pyramid Framework Functional Uplift Table
- Stream Mechanics. Stream Functions Pyramid.
- Tennessee Department of Environment & Conservation. 2017.
- Tennessee Stream Quantification Tool Spreadsheet User Manual.

Web Resources:

- Association of State Wetland Managers (ASWM):
<http://www.aswm.org/wetland-programs/regulation/mitigation/stream-mitigation>
- EPA Compensatory Mitigation: <https://www.epa.gov/cwa-404/compensatory-mitigation> *click on “Technical Resources for Stream Mitigation”
- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). “Stream Restoration Design.” Part 654 National Engineering Handbook. August 2007.
<http://directives.sc.egov.usda.gov/viewerFS.aspx?id=3491>

Session 10A: Performance Standards

Policy/Guidance/SOPs:

- Institute for Water Resources, U.S. Army Corps of Engineers. “A Suggested Approach to Enforceable Performance Standards: Considerations in writing performance standards.” June 2007.
- Mobile District, U.S. Army Corps of Engineers. Stream Mitigation Monitoring Requirements.
- New England District, U.S. Army Corps of Engineers. Compensatory Mitigation Guidance 2010
- South Pacific Division, U.S. Army Corps of Engineers. Regional Mitigation and Monitoring Guidelines
- South Pacific Division, U.S. Army Corps of Engineers. 2016. Regional Mitigation and Monitoring Guidelines Appendix A. Mitigation and

Monitoring Guidelines for Vernal Pools

- St. Paul District, U.S. Army Corps of Engineers. Target Hydrology and Performance Standards for Compensatory Mitigation Sites – Version 6.0. memo. 2016.
- Washington State Department of Transportation. “Writing Performance Measures and Performance Standards for Wetland Mitigation” April 2008.
- Wilmington District, US Army Corps of Engineers. Mitigation Monitoring Update October 2016

Models/Examples/Templates:

- Mobile District, US Army Corps of Engineers. “Habitat Success Criteria/Credit Release Schedules/Monitoring Criteria” for Bayhead drains, Bottomland Hardwoods, and Pine Flats
- Seattle District, U.S. Army Corps of Engineers. Columbia River Mitigation Bank Performance Standards. 2011.
- St. Paul District, U.S. Army Corps of Engineers. Typical Bank Performance Standards
- Washington State Department of Transportation. “Woody Vegetation Performance Criteria for Wetland Mitigation Sites in Washington.” April 2008.

Articles/Papers/Studies:

- Association of State Wetland Managers. 2017. Wetland Restoration: Contemporary Issues & Lessons Learned. ASWM Windham, ME.
- Balcombe, C. K., J. T. Anderson, R. H. Fortney, and W. S. Lordek. 2005. Wildlife use of mitigation and reference wetlands in West Virginia. *Ecol. Engineering*. 25: 85-99
- Environmental Law Institute. Measuring Mitigation: A Review of the Science for Compensatory Mitigation Performance Standards. Washington DC. 2004.
- Evans et al. North River Wetland Restoration Research. Final Report to NC Ecosystem Enhancement Program. North Carolina State University. 2009.
- Jessop., J., G. Spyreas, G. E. Pociask, T. J. Benson, M. P. Ward, A. D. Kent, J. W. Matthews. 2015. Tradeoffs among ecosystem services in restored wetlands. *Biol. Conserv.* 191: 341-348.
- Martin, Steven, Robert Brumbaugh, and Palmer Hough. “Conceptualizing Mitigation Performance Standards.” *National Wetlands Newsletter*. Environmental Law Institute. March-April 2005.
- Mathews and Endress. Performance Criteria, Compliance Success, and Vegetation Development in Compensatory Mitigation Wetlands. 2007.
- Morgan, Joseph A. and Palmer Hough. Compensatory Mitigation Performance: The State of the Science. *National Wetlands Newsletter*, Vol. 37 (6). 2015.

- Ossinger, Mary. Success standards for wetland mitigation projects – a guideline. Washington State Department of Transportation, Environmental Affairs Office. 1999.
- Schlatter, K. S., A. M. Faist, S. K. Collinge. 2016. Using performance standards to guide vernal pool restoration and adaptive management. *Restoration Ecology*. 24(2): 145-152
- Shafer, D. J. and T. H. Roberts. 2007. Long-term development of tidal mitigation wetlands in Florida. *Wetlands Ecol. Manage.* 16:23-31.
- Spadafora, E., A. W. Leslie, L. E. Culler, R. F. Smith, K. W. Staver, and W. O. Lamp. 2016. Macroinvertebrate community convergence between natural, rehabilitated, and created wetlands. *Restoration Ecol.* 24(4): 463-470
- Stefanik and Mitsch. Structural and Functional Vegetation Development in Created and Restored Mitigation Banks of Different Ages. *Ecol. Engineering*. 39:104-112. 2012.
- Stolt et. al. Comparison of Soil and Other Environmental Conditions in Constructed and Adjacent Palustrine Reference Wetlands. *Wetlands* 20(4): 671-683. 2000.
- Van den Bosch, K. and J. W. Matthews. 2017. An assessment of long-term compliance with performance standards in compensatory mitigation. *Environ. Manage.* 59: 546-566.
- Zedler. Success: An Unclear, Subjective Descriptor of Restoration Outcomes. *Ecol. Restoration*. 25(3): 162-168. 2007.

Training Reference/Other Resources/Tools:

- *Reference Document: “Ecological Performance Standards and Credit Release Schedules”

Session 10B: Monitoring and Credit Release

Policy/Guidance/SOPs:

- Huntington District, U.S. Army Corps of Engineers. “Guideline for Wetland Mitigation Banking in Ohio”
- Mobile District, U.S. Army Corps of Engineers. “Guidance for Development of Stream Mitigation Performance Standards”
- Seattle District, U.S. Army Corps of Engineers and Washington Department of Ecology. *Credit Guide for Mitigation Banks*. 2013.
- South Pacific Division, U.S. Army Corps of Engineers. *Uniform Performance Standards* 2012.
- St. Paul District and MN Bureau of Soil and Water Resources. 2015. *Joint Guidance for Developing Mitigation Plan Performance Standards and Credit Release Schedules*.

- Wilmington District, U.S. Army Corps of Engineers. Performance Standards and Monitoring Requirements. 2013.
- Wilmington District, U.S. Army Corps of Engineers. Stream Mitigation Guidelines. 2003 **success criteria stated in pages 23-25*

Models/Examples/Templates:

- *Boarshead Ranch LCC. Boarshead Ranch Mitigation Bank Monitoring Plan (Appendix G), March 18, 2016. **also listed under Course Exercise References*
- Maryland Nontidal Wetland Credit Release schedule (undated)
- Memphis, Kansas City, St Louis, Little Rock, and Rock Island Districts, U.S. Army Corps of Engineers. "Missouri Stream Mitigation Method." February 2007.
- Missouri Steam Mitigation Method. February 2007
- Mobile District, U.S. Army Corps of Engineers. Bottomland Hardwoods Habitat Success Criteria/Credit Release Schedule. 2016 update.
- Norfolk District, U.S. Army Corps of Engineers and Virginia DEQ. Template Mitigation Banking Instrument. 2010.
- Savannah District, U.S. Army Corps of Engineers. Mitigation Metrics and Performance Standards in Savannah District Mitigation Bank Guidelines (Appendix 10). Jan 2011.
- South Pacific Division, U.S. Army Corps of Engineers. Examples of Uniform Performance Standards
- South Pacific Division, U.S. Army Corps of Engineers. Table of Uniform Performance Standards
- Wilmington District, U.S. Army Corps of Engineers. Bank Credit Release Template. 2016
- Wilmington District, U.S. Army Corps of Engineers. Credit Release Schedules April 2011

Articles/Papers/Studies:

- Ahn, C. and Peralta, R. M. Soil properties are useful to examine denitrification function development in created mitigation wetlands. *Ecol. Engineering* 49: 130-136. 2012.
- Ambrose, R. and S. Lee. An Evaluation of Compensatory Mitigation Projects Permitted Under Clean Water Act Section 401 by the Los Angeles Regional Quality Control Board, 1991-2002. Department of Environmental Health Sciences. UCLA. 2004.
- Cooper and Merritt. Assessing the Water Needs of Riparian and Wetland Vegetation in the Western United States, Gen. Tech. Rep. RMRS-GTR-282. Fort Collins, CO. USDA, Forest Service. Rocky Mountain Research Station. 2012.
- Environmental Law Institute. *Assessing Stream Mitigation Guidelines at the Corps District and State Levels*. White Paper. 2016.

- Environmental Law Institute. *Assessing Stream Mitigation Practice*. White Paper. 2016.
- Fennessy, S. Evaluating Mitigation Performance: Functional and Condition-Based Assessment Methods. *National Wetland Newsletter*. 33(2) 8-9. 2011.
- Harman, W. and M. Carter, *A function-based review of stream restoration science*. ELI White Paper. 2016.
- Mack, John and Mick Micacchion. *Ecological Assessment of Ohio Mitigation Banks*. Ohio EPA Technical Report WET/2006-1
- Mack, John J., Siobhan F. Fennessy, Mick Micacchion, and Deni Porej. INTEGRATED WETLAND ASSESSMENT PROGRAM. Part 6. Standardized Monitoring Protocols and Performance Standards for Wetland Creation, Restoration, and Enhancement, Version 1.0. Ohio EPA Technical Report WET/2004-6. 2004.
- Moreno-Mateos et al. Structural and Functional Loss in Restored Wetland Ecosystems. *PLoS Biology*. 10(1):1-27. 2012.
- Reiss, Kelly Chinnners, Erica Hernandez, Mark T. Brown. An Evaluation of the Effectiveness of Mitigation Banking in Florida: Ecological Success and Compliance with Permit Criteria. May 2009.
- Reiss, Kelly Chinnners, Erica Hernandez, Mark T. Brown. An Evaluation of the Effectiveness of Mitigation Banking in Florida: Ecological Success and Compliance with Permit Criteria: Appendix A: Data Collection Methods for Field Surveys
- Reiss, Kelly Chinnners, Erica Hernandez, Mark T. Brown. An Evaluation of the Effectiveness of Mitigation Banking in Florida: Ecological Success and Compliance with Permit Criteria: Appendix B: Field Data Sheets
- Reiss, Kelly Chinnners, Erica Hernandez, Mark T. Brown. An Evaluation of the Effectiveness of Mitigation Banking in Florida: Ecological Success and Compliance with Permit Criteria: Appendix C: Mitigation Bank State Permit Summaries with Success Criteria and Credit Release Schedules
- Robertson, Morgan M. Emerging ecosystem service markets: trends in a decade of entrepreneurial wetland banking. *Frontiers in Ecology and the Environment* 4:297-302. 2006.
- Smith et al. An approach for assessing wetland functions using hydrogeomorphic classification, reference wetlands and functional indices. *Wetlands Research Program Technical Report WRP-DE-9*. U.S. Army Corps of Engineers. 1995.
- Spiels, D.J., M. Coneybeer, J. Horn. Community Structure and Quality After 10 Years in Two Central Ohio Mitigation Bank Wetlands. *Environ. Manage.* 38:837-852. 2006.
- Spiels, Douglas J. Vegetation development in created, restored, and enhanced mitigation wetland banks of the United States. *Wetlands* 25: No. 1. 2005.
- Wall, C.B. and K.J. Stevens. Assessing Wetland Mitigation Efforts Using Standing Vegetation and Seedbank Community Structure in Neighboring

Natural and Compensatory Mitigation Wetlands in North-Central Texas. Wetl. Ecol.Manage. 2014.

Training Reference/Other Resources/Tools:

- *Reference Document: "Credit Release Schedules"
- Ohio EPA Technical Report WET/2010-1A: Assessment of Wetland Mitigation Projects in Ohio, 2010
- South Pacific Division, U.S. Army Corps of Engineers. Worksheet for Uniform Performance Standards

Session 11A: How Conservation Banking Relates to Mitigation Banking

Policy/Guidance/SOPs:

- Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds, January 2001.
- Maine Dept of Transportation, FHWA, and New England District US Army Corps of Engineers. 2016. Programmatic Biological Assessment for Transportation Projects for Gulf of Maine Atlantic Salmon
- National Marine Fisheries Service, NOAA. West Coast Region. West Coast Region Conservation Banking Guidance. 2015.
- Sacramento Fish & Wildlife Office, USFWS. Santa Rosa Programmatic Biological Opinion. 1998.
- Sacramento Fish & Wildlife Office, USFWS. Vernal Pool Programmatic Biological Opinion. 1996.
- ^U.S. Department of the Interior. Final Report: Review of the Department of the Interior Actions that Potentially Burden Domestic Energy, October 24, 2017.
- U.S. Fish & Wildlife Service. Director's Order 218. Policy Regarding Voluntary Pre-Listing Conservation Actions, January 27, 2017.
- U.S. Fish and Wildlife Service. Final Endangered Species Act Compensatory Mitigation Policy; December 27, 2016, (81 FR 95316) **under Review as of June 2017*
- U.S. Fish and Wildlife Service. Final Mitigation Policy; November 21, 2016, (81 FR 83440) **under Review as of June 2017*
- U.S. Fish & Wildlife Service. Greater Sage Grouse Range-wide Mitigation Framework. 2014.
- U.S. Fish & Wildlife Service. Guidance for the Establishment, Use, and Operation of Conservation Banks. 2003.
- U.S. Fish & Wildlife Service. Interim Guidance on Implementing the Final Endangered Species Act Compensatory Mitigation Policy; January 17, 2017. **under Review as of June 2017*
- U.S. Fish & Wildlife Service. Revised Programmatic Biological Opinion

for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat. 2016

- U.S. Fish & Wildlife Service – Alabama, Louisiana, and Mississippi. Guidelines for the Establishment, Management and Operation of Gopher Tortoise Conservation Banks. 2009.
- U.S. Fish & Wildlife Service – Southwest Region. Guidelines for the Establishment, Management and Operation of Golden-cheeked Warbler and Black-capped Vireo Mitigation Lands. 2013.

Web Resources:

- USFWS Endangered Species Act
<http://www.fws.gov/endangered/laws-policies/index.html>
- USFWS ESA Section 7 Consultation
<http://www.fws.gov/endangered/what-we-do/consultations-overview.html>
- USFWS ESA Section 10 Habitat Conservation Plans
<http://www.fws.gov/endangered/what-we-do/hcp-overview.html>

Models/Examples/Templates:

- ^California BEI Template, September 2017. **also listed under Session 2a: Instrument Documentation*
- California Conservation Easement Template. March 2017. **also listed under Session 4: Site Protection*
- California Subordination Agreement Template
- Range-Wide Indiana Bat ILF Program Instrument. 2017

Articles/Papers/Studies:

- Carreras Gamarra, Maria Jose and Theodore Toombs. Thirty Years of Species Conservation Banking in the US: Comparing Policy to Practice. Biological Conservation, June 12, 2017.
- Government Accountability Office. U.S. Fish and Wildlife Service's American Burying Beetle Conservation Efforts. GAO Report 17-154 (2017).

Training Reference/Other Resources/Tools:

- U.S. Fish & Wildlife Service. "Strategic Habitat Conservation: Landscape Conservation Cooperatives." Fact Sheet: 2012.
- U.S. Fish & Wildlife Service. "Strategic Habitat Conservation: Thinking Bigger for Fish and Wildlife". Fact Sheet: 2012.

Session 11B: Joint Banking & Credit Stacking

Policy/Guidance/SOPs:

- U.S. Army Corps of Engineers and U.S. Environmental Protection Agency. Compensatory Mitigation Rule: Timeline for Bank or ILF Instrument Approval. 2008. **see print-out under session 2*
- U.S. Fish & Wildlife Service et al. "Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects." April 2006.

Articles/Papers/Studies:

- Climate Action Reserve. Nutrient Management Project Protocol Credit Stacking Subcommittee Management Memo 1. 2011.
- EPRI. "US National Opinion Survey on Stacking Environmental Credits." Technical Report. 2011.
- Fox, J, R. Gardner, and T. Maki. Stacking opportunities and risks in environmental markets. *Environmental Law Reporter*. 41:10121-10125. 2011.
- Gardner and Fox. "The Legal Status of Environmental Credit Stacking." Stetson University College of Law, Legal Studies Research Paper Series, Research Paper 2014-2.
- *Layne, Valerie. "Layering Multiple Credit Types in Mitigation Banks." *National Wetland Newsletter* 33(1): 2011
- Martin, Steve. "An Alternative to Unbundling Ecosystem Services." *Viewpoints*, September/October 2010.
- Pindilli, E. and F. Casey. Biodiversity and habitat markets: policy, economic and ecological implications of market-based conservation. *U.S. Geological Survey Circular* 1414. 2015.
- Robertson, BenDor, Lave, Riggsbee, Ruhl, and Doyle. Stacking Ecosystem Services. *Front. Ecol. Environ.* 12(3): 186-193. 2014.
- Stephensojn, Kurt, Sarah Chase-Walsh, Alyssa Lindrose, Julie Worley, and John Ignosh. 2016. *Virginia Citizen's Guide to Environmental Credit Trading Programs: An Overview*. Virginia Tech. Virginia Cooperative Extension .Publication ANR-173P.
- Wilkinson and Thompson. 2005 Status Report on Compensatory Mitigation in the United States. Environmental Law Institute. 2006.

Session 12: Long-Term Management & Stewardship Financing

Policy/Guidance/SOPs:

- Florida Administrative Code 62-342.700 – Financial Responsibility, February 19, 2015.
- North Carolina Office of Conservation, Planning, and Community Affairs. Standard Operating Procedures for NCDENR Stewardship sites. July 2012
- ^U.S. Department of the Interior. Technical Guide: Adaptive Management, 2009.

Models/Examples/Templates:

- California Department of Fish & Game. Investment Policy Statement for Mitigation Endowment Accounts Held by the National Fish and Wildlife Foundation.
- California Department of Fish & Game. Long-term Management Funding Recipient Agreement Template, 2011.
- California Renewable Energy Action Team. Investment Policy Statement for Mitigation Endowment Accounts Held by the National Fish and Wildlife Foundation, December 1, 2010.
- *Checklist of Required Comprehensive Conservation Plan Elements
- City of Carlsbad – Open Space Management Plan
- *Center for Natural Lands Management (CNLM). Annotated Outline of Standard Format Management Plan for Resource and Habitat Conservation Areas – Five-Year Management Plan.
- Center for Natural Lands Management (CNLM). *Project Evaluation Checklist (Due Diligence & Acquisition Considerations)*. 2005.
- *Grasslands Mitigation Bank: Endowment Schedule, January 2015.
- Grasslands Mitigation Bank: Long-term Management Funding Recipient Agreement, November 9, 2015.
- Maine Natural Resource Conservation Program. Management Plan Template. 2013.
- *Sacramento District, U.S. Army Corps of Engineers. Long-Term Management Plan Template
- San Diego Foundation. Endowment Agreement Template. 2013.
- Virginia Department of Transportation. Long-Term Management Memorandum of Agreement. 2015.

Articles/Papers/Studies:

- Blaine, M. Developing Long-Term Management Plans for Mitigation Sites. National Wetlands Newsletter. 33(3) 9-10. 2011.

- Coffey, Greg and Mike Ruff. 2016. Elements of a clearly defined investment policy statement for non-profits: An update. Russell Investments Research.
- DeYoung, Greg and Steve Moore. 2016. Long-Term Stewardship Funding and Mitigation Industry Sustainability. National Wetlands Newsletter.
- Electric Power Research Institute (EPRI). Wetland and Conservation Banking in Transmission Corridor Rights-of-Way: Policy and Opportunities (Summary). December 18, 2008.
- Franklin, Thomas M., Ronald Helinski, and Andrew Manale. Using Adaptive Management to Meet Conservation Goals. The Wildlife Society Technical Review 07-1, September 2007.
- Gary, S. Charities, Endowments, and Donor Intent: The Uniform Prudent Management of Institutional Funds Act. Georgia Law Review 1277. 2007.
- Hutton, Lyn, et al. "Asset Allocation: The Case for Diversified Inflation Hedging Strategies". CommonFund Institute. 2009.
- Kihlsinger, R, et. al. Taking on the Long-Term Stewardship of Wetlands Mitigation Sites. National Wetlands Newsletter. 29(3) 29-32. 2007.
- Layne, Valerie. No Endowment, No Protection: Long-Term Funding Considerations for Mitigation and Conservation Banks. National Wetlands Newsletter. 34(1) 7-8. 2012.
- Lyons, James E., Michael C. Runge, Harold P. Laskowski, and William L. Kendall. Monitoring in the Context of Structured Decision-Making and Adaptive Management. The Journal of Wildlife Management 72(8), 2008.
- Miller, S.E. Climate Change and Adaptive Management: the intersection of dynamic natural and anthropogenic processes with the practical needs of conservation management. SHC Technical Advisory Team, September 1, 2008.
- Rist, Lucy, Adam Felton, Lars Samuelsson, Camilla Sandstrom, and Ola Rosvall. A New Paradigm for Adaptive Management. Ecology and Society 18(4): 63.
- Salafsky, Nick, Richard Margoluis, and Kent Redford. Adaptive Management: A Tool for Conservation Practitioners. Biodiversity Support Program (BSP), a consortium of World Wildlife Fund, The Nature Conservancy, and World Resources Institute.
- Teresa, Sherry. "Perpetual Stewardship Considerations for Compensatory Mitigation and Mitigation Banks." May 2009.
- Teresa, Sherry. "The Demise of The Environmental Trust." *Ecosystem Marketplace*. March 9, 2006.
- Thomas, Jenny. 2016. Evaluating Long-Term Stewardship of

Compensatory Mitigation Sites: Preliminary Findings from California. National Wetlands Newsletter.

- Wildlife Habitat Policy Research Program, 2006 Research Program. Design of US Habitat Banking Systems – WHPRP Final Report.

Training Reference/Other Resources/Tools:

- *Reference Document: “Long-Term Management Plans”
- A.B. Sample Estate Management Recommendations
- Center for Natural Lands Management (CNLM). Natural Lands Management Cost Analysis: 28 Case Studies. 2004.
- CommonFund Institute. “Principles of Nonprofit Investment Management”. 2005.
- Environmental Law Institute and Land Trust Alliance. *Wetland and Stream Mitigation: A Handbook for Land Trusts*. 2012.
- National Fish & Wildlife Foundation (NFWF). Impact-Directed Environmental Accounts (IDEA) Long-Term Management and Maintenance Funds.
- San Diego Foundation. Investment Policy Statement. 2013.
- The Nature Conservancy (TNC). The Long-Term Stewardship Calculator Accompanying Handbook. 2016.
- U.S. Fish & Wildlife Service. Writing Refuge Management Goals and Objectives: A Handbook.

Session 13: 3rd Party Mitigation Oversight & Compliance

Policy/Guidance/SOPs:

- Norfolk District, U.S. Army Corps of Engineers and Virginia Department of Environmental Quality. “Recommendations for Wetland Compensatory Mitigation: Including Site Design, Permit Conditions, Performance and Monitoring Criteria.” 2004.
- Savannah District, U.S. Army Corps of Engineers. Guidelines to Evaluate Mitigation Bank Credit Purchases.
- Savannah District, U.S. Army Corps of Engineers. Statement of Credit Availability. April 2018.
- South Pacific Division, U.S. Army Corps of Engineers. Regional Compensatory Mitigation and Monitoring Guidelines 2015
- U.S. Army Corps of Engineers. *Minimum Monitoring Requirements for Compensatory Mitigation Projects Involving Restoration, Establishment and/or Enhancement of Aquatic Resources*. Regulatory Guidance Letter No. 08-03. August 3, 2006.

Models/Examples/Templates:

- California Agreement for Sale of Mitigation Credits.
- Jacksonville District, U.S. Army Corps of Engineers. Mitigation Bank Credit Sale Template.
- Libertyville Wetland Mitigation Bank Third Annual Monitoring Report (2008)
- Libertyville Wetland Mitigation Bank Third Annual Monitoring Report Photo Appendix (2008)
- Maine In-Lieu Fee (ILF) Project Worksheet Template. 2011.
- Norfolk District, U.S. Army Corps of Engineers. Initial Credit Release Checklist. October 2009.
- Savannah District, U.S. Army Corps of Engineers. Credit Sales Form.
- Wilmington District, U.S. Army Corps of Engineers. Bank & ILF Transfer of Mitigation Responsibility Agreement. 2013.

Articles/Papers/Studies:

- Gardner, R. and T. R. Pulley. Corporate Shell Games: LLPs, LLCs, and Responsibility for Mitigation Sites. National Wetland Newsletter. 31(6):6-11. 2009.
- Gardner, R. Mitigation Banking & Reputational Risk. National Wetland Newsletter. 34(6): 10-11. 2012.
- Gardner, R. C. Mitigation Enforcement, Breach of Contract, and the Law of Unintended Consequences. National Wetlands Newsletter. 37(2): 11-12. 2015.
- Tanner, C. et. al. Restoration of freshwater intertidal habitat functions at Spencer Island, Everett, Washington. Restoration Ecology 10(3): 564-576. 2012.

Training Reference/Other Resources/Tools:

- *Reference Document: – “3rd Party Mitigation Oversight & Compliance”

Session 14: Dispute Resolution

Policy/Guidance/SOPs:

- *U.S. Army Corps of Engineers and U.S. Environmental Protection Agency. Final Compensatory Mitigation Rule: Timeline for Bank Instrument Dispute Resolution. 2008.

Models/Examples/Templates:

- Alaska Statewide Interagency Review Team for Compensatory Mitigation Roles and Responsibilities Agreement. 2013.
- California 8 Party MOU on Mitigation and Conservation Banking and ILF Programs (2011) *see session 2 in binder for hard copy

- Oregon Interagency Review Team Roles and Responsibilities. 2013
- *U.S. Fish & Wildlife Service. Letter to New York District, USACE Re: Dispute of Kane Mitigation Bank. Dec 29, 2009.

Articles/Papers/Studies:

- Wood, Cindy. "From Building Sandcastles to Building Wetlands." National Wetlands Newsletter, Vol. 35 No. 6 (2013).

Training Reference/Other Resources/Tools:

- *Reference Document: "Dispute Resolution"
- U.S. Institute for Environmental Conflict Resolution. Degrees of Collaboration.

III. Course Exercise References

Instrument Used for Mock Review Exercises

- **Houston-Conroe Wetland and Stream Mitigation Bank Instrument (MBI) *hard copy bound separately from notebook*

Model Banking Instruments

- Boarshead Ranch Bank Instrument
- Cosumnes Floodplain Bank Enabling Instrument (BEI) Exhibits
 - E-1 Preliminary Title Report
 - E-2 Property Assessment & Warranty
 - E-3 Plat Map
 - E-4 Conservation Easement
 - E-5 Title Insurance Report
 - D-2 Endowment Funding Schedule
 - D-5 Long-Term Management Plan
- Grasslands Mitigation Bank (Sacramento District)
- San Luis Rey Mitigation Bank Instrument (Los Angeles District)