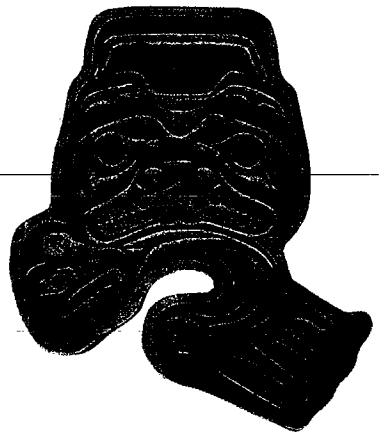

SU-KNIK MITIGATION BANK

South-Central Alaska

Umbrella Mitigation Bank Instrument

Prepared for

The Interagency Review Team

Sponsored by

The Matanuska-Susitna Borough And

Sustainable Environments, LLC

Kevin F. Noon Ph.D. 303 679 8262
James B. Hodge 415 515 6976
Jerome Ryan 415 435 3734

May 2008

Contents

APPENDICES FOLDER

RESOURCE FOLDER

Introduction

The purpose of the proposed Su-Knik Mitigation Bank is to provide additional mitigation opportunities to permit applicants for unavoidable impacts to waters of the United States. Utilization of the bank would offer an alternative mitigation option when on-site, in-kind compensatory mitigation opportunities are not available, practicable or capable of compensating for impacts to aquatic resources lost as a result of a permitted activity. Compensatory mitigation means the restoration (re-establishment - rehabilitation), establishment (creation), enhancement and/or in certain circumstances, preservation of aquatic resources for the purpose of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved. Utilization of the Su-Knik Mitigation Bank would offset authorized wetland impacts in the service area through preservation of lands (defined in this document) within the Matanuska-Susitna Borough.

A preservation mitigation bank provides compensatory mitigation for activities authorized by Corps permits are appropriate for several reasons. The wetlands proposed for inclusion in the bank contribute to the ecological sustainability of area watersheds. Preservation has been determined to be appropriate and practicable. These parcels are located within the path of projected development and they are therefore under threat of destruction or adverse modifications. Preserved mitigation bank lands will be permanently protected through an appropriate real estate document or other legal instrument.

The Matanuska-Susitna Borough (referred to here as the Borough) and Su-Knik Environments, LLC, An Alaska Limited Liability Company, Jerome Ryan, Kevin Noon, and James Blythe Hodge, collectively referred to as Sustainable Environments, LLC, entered an Wetland Preservation Bank Agreement dated December 10, 2006, to establish an umbrella preservation mitigation bank that will protect large tracts of undeveloped wetland complexes from uses that are incompatible with the goals of the individual mitigation banks. Please refer to the model conservation easement in Appendix A. Each individual bank adopted under this agreement bank would utilize a HydroGeomorphic Function Assessment Method (including Riverine, Slope-Flat, or Lacustrine resources that include stream banks; some adjacent upland and riparian corridors; and forested, scrub-shrub, and palustrine wetlands), to determine functional capacity index scores.

The occurrence of wetlands in the south-central region of Alaska (Cook Inlet/Susitna Lowland) is approximately 28 percent (2.64 million acres) of the total area (Hall et. al. 1994). Because wetlands in the region are relatively undisturbed, there has traditionally been little opportunity to restore or enhance wetlands for use as compensation. The wetland mitigation banking concept was sanctioned as a viable means of providing compensatory mitigation options to the permit process by the adoption of the 2008 Compensatory Mitigation for Losses of Aquatic Resources; Final Rule (Department of the Army, Corps of Engineers 33 CFR Parts 325 and 332), that will become effective 60 days past April 10th(hereinafter referred to as the Final Rule). Wetland banking provides for the use of preservation banks to offset permitted impacts in

situations were wetland restoration, creation, or enhancements are not practicable. This umbrella instrument creates opportunities for permittees to compensate for wetland losses.

Bank Parcel Selection

Selection of the Bank parcels began with the objective of finding large, contiguous land holdings containing high quality wetland areas. The consensus of the Interagency Review Team (IRT-formerly called the MBRT for Mitigation Bank Review Team) was that Su-Knik Environments, LLC, should investigate the feasibility of creating preservation bank sites in areas that have a potential for future large scale development. This would provide opportunities to compensate for near-term 404 permit actions by preempting development impacts and retaining important wetland functions through preservation of the resource.

Su-Knik Environments, LLC, selected and analyzed 16 groups of land holdings according to a site selection function matrix evaluation. The IRT helped Su-Knik Environments, LLC, refine the study; thereafter the land holdings were reevaluated according to the recommended changes. Su-Knik Environments, LLC, then reevaluated the value of the proposed properties through a regional ecological feasibility assessment. This task involved the analysis of 92 available regional environmental documents (including local area ordinances, state environmental planning documents, non-profit watershed or environmental interest group environmental plans) that prioritize the ecological needs for improving the health of the watersheds.

The function matrix variables used in the analysis were selected because they represent the most important characteristics of a bank site relative to the ecological and economic conditions of the regional ecosystems. Variables were selected, through consensus of the IRT and Su-Knik Environments, LLC, based on an understanding of which aquatic functions the team members considered most important in the bank sites. Each of sixteen groups of land holdings were evaluated according to the following twelve variables:

- Alaska DEC Stream Condition Biological Index
- Threat of Development: Infrastructure, Housing, Mining, or Farming
- Stormwater Storage Capability
- Water Quality Improvement Capability
- Estuarine or Non- Estuarine
- Headwater Wetland Habitat or Not
- Riverine Habitat: Low, Mid, Upper
- Anadromous Fish Use
- Habitat Connectivity
- Waterfowl Habitat Capability
- Recreation Opportunity
- Achievement of Regional or Watershed Planning Goals

The IRT agreed with Su-Knik Environments, LLC, recommendation to eliminate 12 of the 16 groups of Borough land holdings as less appropriate for wetland mitigation banking at this time. Three groups of land holdings contain large wetland areas with functional scores significant to the health of several watersheds.

The following banks were priority ranked according to the matrix scores. The top-ranked group of bank parcels is called Big Lake South and totals approximately 2,279 acres. It is located south east of Big Lake, within the Houston, Wasilla, and Palmer growth corridor. The second group of parcels called Big Lake West totals approximately 4,923 acres and is located southwest of Big Lake. The third group, Fish Creek West, totals approximately 5,554 acres and is located in the Susitna River Watershed. The combined area of all parcels is approximately 12,756 acres. Su-Knik Environments, LLC, proposes creating a bank out of each of the three groups as demand for wetland credits increase over the next 10 to 20 years.

The objective of the parcel identification process is to choose the most ecologically and economically appropriate parcels to comprise the individual banks. The IRT and the bank Proponents have agreed that the parcels referenced above are the best potential candidates for banking that are available at this time, however, this instrument will allow for the selection of any additional parcels that are deemed in the future, by Su-Knik Environments, LLC, the Matanuska-Susitna Borough, and the IRT, to be appropriate for inclusion in this Umbrella Mitigation Bank Instrument.

These additional parcels do not have to be of Borough ownership. If and when these additional sites are found, they will go through the same review and documentation process that has been set out in this umbrella instrument. The umbrella instrument may allow third party interest to add parcels to the wetland bank in partnership with Su-Knik Environments, LLC. Amendments to the easement documents would be necessary to make them appropriate for the different relationships existing under this type of a wetland bank instrument.

Bank Parcel Selection to Achieve Watershed Planning Objectives

The U.S. Army Corps of Engineers (Corps), Environmental Protection Agency, and other regulatory agencies are considering policy recommendations for mitigation banking, from a draft report that is now under review, titled: Compensatory Mitigation for Losses of Aquatic Resources: Final Rule (33 CFR Parts 325-332). The rule recommends that site selection for compensatory mitigation (including bank sites) be conducted on a watershed scale. This approach maintains wetland diversity, connectivity, and appropriate proportions of uplands and wetlands needed to enhance the long-term stability of the wetland and riparian systems. The report also states that riverine wetlands, riparian areas, and other uplands should receive special attention and protection because their value for stream water quality, fish habitat, and overall river health that cannot be duplicated in any other landscape position.

The Process for Adding Banks to the Umbrella Instrument

This umbrella instrument states the guidelines, terms, equations, and agreements that are common to all future proposed banks. Details specific to each bank, for example the processes by which the components are calculated, (the use of the HGM evaluation methodology to determine credit value of the bank) will be explained in the individual bank documents. What remains is to apply these procedures to each of the individual banks and write a detailed Plan for each bank. The IRT will review and approve the bank plans, which will be added to this Umbrella Mitigation Bank Instrument.

The components of each individual plan are detailed in Appendix B. By gaining initial approval of the basic guidelines, terms, equations, and agreements in this document, this process will avoid having to complete a certification process for each individual bank. The finalized individual banking Plans will be attached to this umbrella instrument as addendums. Adding the approved Plans will constitute final certification for each individual bank.

Authorities

This Umbrella Mitigation Bank Instrument and the establishment, operation and maintenance of subsequent site specific mitigation banks is in accordance with the following authorities:

Federal:

a. Clean Water Act (33 U.S.C. 1251 *et seq.*)
b. Rivers and Harbors Act of 1899 (33 U.S.C. 403 *et seq.)*
c. Executive Order 11990—Protection of Wetlands
d. Environmental Protection Agency, Section 404(b)(1) Guidelines
e. Guidelines for Specification of Disposal Sites for Dredged or Fill Material (40 CFR Part 230)
f. Regulatory Programs of the Department of the Army, Corps of Engineers (33 CFR Parts 320-330)
g. 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 (February 6, 1990)
h. Title XII Food Security Act of 1985, as amended (16 U.S.C. 3801 et seq.)
i. National Environmental Policy Act (42 U.S.C. 4321 *et seq.*), including the Council on Environmental Quality's implementing regulations (40 CFR Parts 1500-1508)
j. Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*)
k. U.S. Fish and Wildlife Service Mitigation Policy (46 FR pages 7644-7663, 1981)
l. Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*)
m. Magnuson Fisheries Conservation and Management Act (16 U.S.C. 1801 *et seq.*)

n. National Marine Fisheries Habitat Conservation Policy (48 *Fed. Reg.* 53,142 (1983))
o. Transportation Equity Act for the 21st Century (codification pending)
p. Coastal Zone Management Act (16 U.S.C. 1451 *et seq.*)
q. National Historic Preservation Act, Section 106 (16 U.S.C. 470)
r. 2008 Compensatory Mitigation for Losses of Aquatic Resources; Final Rule (Department of the Army, Corps of Engineers 33 CFR Parts 325 and 332).
s. Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army, Concerning the Clarification of the Clean Water Act Section 404 Memorandum of Agreement on Mitigation (January 24, 1992)
t. Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army, Regarding Mitigation Sequence and No Net Loss of Wetlands in Alaska (May 13, 1994)

State:

a. Coastal Management Act, Alaska Stat. Sec. 46.40
b. Coastal Management Program, 6 Alaska Admin. Code Secs. 50, 80, 85
c. Alaska Land Act, Alaska Stat. Sec. 38.05.070-075

Borough:

a. Wetland Preservation Agreement document between Su-Knik Environments, LLC, an Alaska Limited Liability Company, Jerome Ryan, Kevin Noon, and James Blythe Hodge referred to in the agreement as "The Sustainable Environments Group" dated December 10, 2006.

b. Ordinance 05-052, adopted April 19, 2005.

c. Ordinance 05-053, adopted April 19, 2005.

d. Ordinance 05-054, adopted April 19, 2005.

Ownership of Bank Lands and Banking Credits

The fee title to the bank properties will continue to be owned and held by the Matanuska-Susitna Borough. The mitigation banking credits will be owned by the Matanuska-Susitna Borough and Su-Knik Environments, LLC.

Permittee Impacts to Aquatic Resources Suitable for Compensation

The Umbrella Mitigation Bank Instrument is designed to preserve riverine, lacustrine, and slope-flat aquatic resources that include streams, stream banks, adjacent riparian corridors;

forested, scrub-shrub and palustrine wetlands, and surrounding upland areas. Impacts to jurisdictional waters of the United States within the service area, such as riverine (including stream channels), lacustrine, and slope-flat palustrine wetlands, may be compensated by the mitigation bank (if those habitats exist in the individual bank) in accordance with the Final Rule. However, the Corps retains discretion to determine if compensatory mitigation is practicable, and therefore required, and whether the mitigation plan proposed by a permit applicant is sufficient to compensate for project impacts. The Federal Guidance indicates that non-tidal wetlands should typically not be used to compensate for the loss or degradation of estuarine or tidal wetlands. Therefore, this banking instrument will not provide for such use.

Geographic Service Area

The service areas for the proposed banks are defined in the Final Rule. On April 10th, 2008 the EPA and the U.S. Army Corps of Engineers (the Corps) announced the Compensatory Mitigation for Losses of Aquatic Resources; Final Rule (Department of the Army, Corps of Engineers 33 CFR Parts 325 and 332), which regulates governance of compensatory mitigation for authorized impacts to wetlands, streams, and other waters of the United States under Section 404 of the Clean Water Act. The Final Rule states "In rural areas, several contiguous 8-digit Hydrologic Unit Codes or a 6-digit HUC watershed may be an appropriate service area for the mitigation bank." The umbrella service area, for all three proposed banks, is the HUC 19020505 as defined according to the US Geological Survey Hydrologic Unit Map of the State of Alaska (1987), which is the lower Susitna River watershed and a small sub unit of the South-Central Alaska region sub watershed. Please refer to Appendix C: the Eight-Digit Code Hydrologic Unit. The geographic service areas, for each mitigation bank approved under this umbrella instrument, are specific to each bank and much smaller subunits of the USGS eight-digit code hydrologic unit shown in Appendix D. The service areas for each bank site are also shown graphically in Appendix D.

Functional Assessment and the Mitigation Process

While a detailed discussion of wetland functional assessment methodologies is beyond the scope of this document, several key concepts are fundamental to any mitigation program.

First, the intention of compensatory mitigation is to offset for specific, unavoidable impacts to individual aquatic resource functions at a project site.

Secondly, achieving and documenting functional replacement for authorized impacts requires a method to quantify both aquatic functions and impacts. Functional assessment methodologies are designed to quantify the "functional capacity" of a particular wetland. "Functional capacity" means the degree to which an area of aquatic resource performs a specific function, such as stormwater or particulate retention. There are a variety of functional assessment methods in use across the country.

In 1996, the USACE, USEPA, NRCS, FHWA, and USFWS cooperatively developed a National Action Plan to Implement the HydroGeomorphic (HGM) Approach to assessing the functions of different wetland types. The HGM Approach is the preferred functional assessment method within Alaska and substantial effort has been invested in the development of regional guidebooks for implementing it. Member agencies of the IRT are currently working to further refine the existing methodologies.

Once functional capacity has been quantified for an area, the degree of impact to various functions from a proposed project can be determined. And once the degree of impact is known, appropriate compensatory mitigation can be required to offset the loss of aquatic resource function.

Lastly, mitigation credits for mitigation banks and in-lieu fee programs are generated on the basis of preserving functional capacity. This capacity can be pre-existing, as in the case of a preservation bank such as the Su-Knik Mitigation Bank, or it can be generated through the restoration, establishment, or enhancement of a wetland resource.

In a very real sense, the currency of compensatory mitigation is aquatic functional capacity. This is why a functional assessment of the wetlands at mitigation sites such as those parcels that make up the Su-Knik Mitigation Bank is just as important as the assessment at the project site. The Compensatory Mitigation Final Rule (April 10, 2008) states: "Where practicable, an appropriate assessment method (e.g., hydrogeomorphic approach to wetlands functional assessment, index of biological integrity) or other suitable metric must be used to assess and describe the aquatic resource types that will be restored, established, enhanced and/or preserved by the mitigation bank or in-lieu fee project." [40 CFR part 230.98(o)(1-2)]

Functional Assessment of Bank Parcels

The functional capacity of wetlands within the Su-Knik Mitigation Bank will be assessed using the HGM Approach. The area of different wetland types within each bank parcel will first be measured by the Su-Knik Environments, LLC, using field delineations incorporated into a GIS data base. Then the HGM functional assessment will be conducted for each type of wetland using the existing or refined protocols.

The HGM Approach

The HGM Approach is a collection of concepts and methods for developing functional indices, and subsequently using them to assess the capacity of a wetland to perform functions relative to similar wetlands in the region. It includes four integral components: (a) the HGM Classification, (b) reference wetlands, (c) assessment models and functional indices, and (d) assessment protocols.

The HGM Classification identifies groups of wetlands that function similarly using the three criteria of geomorphic setting, water source, and hydrodynamics. Riverine, lacustrine, and slope/flat are general wetland types within the HGM classification. Each general wetland type includes a number of wetland subclasses identified by common characteristics such as vegetation. The classification of wetlands involves identifying a reference class that serves as a standard for comparing functional capacity.

The actual assessment uses assessment models to generate a Functional Capacity Index (FCI) score for individual wetland functions such as floodwater and particulate retention, cycling of elements and nutrients, and the maintenance of characteristic vegetation. The assessment models are simple representations of a function (i.e., floodwater retention) performed by a wetland type.

Variables contained in the assessment models represent the characteristics of the wetland and surrounding landscape that influence the capacity of the wetland to perform that function. The variables are combined in the assessment model to produce an FCI score with a value ranging from 0.0-1.0. The FCI score indicates how well a wetland performs that function relative to the reference wetland, which has a value of 1.0. Lower FCI scores imply lower functional capacity.

Determining Mitigation Credits

As found in the Compensatory Mitigation Final Rule (April 10, 2008), the definition of "credit" is "a unit of measure (e.g., a functional or a real measure or other suitable metric) representing the accrual or attainment of aquatic functions at a compensatory mitigation site." Functional assessment units may be used by themselves or linked to acres or linear feet as units of measure for mitigation credits. The credits are a measure of the wetland functional capacity, and in most cases are accounted for on a per-acre basis.

The accounting of mitigation credits for the Su-Knik Mitigation Bank will be done using credit acres. Fractional units of credits acres (i.e., 0.5) will be available to compensate for impacts of areas of less than one acre. It is anticipated that this would be the case when mitigating for impacts to riverine wetlands.

Credit acre numbers will be generated by multiplying the FCI scores for the individual functions by the acreage of each wetland type. [Example: 254.5 acres of slope/flat palustrine shrub scrub (S/F PSS) wetlands with an FCI of 0.96 for the function of particulate retention yields 244.3 credit acres.]

Credit acres will be calculated and tracked on an individual function basis for each wetland type. The FCI scores for individual wetland functions may also be combined and averaged for each of the three major functional groups: Hydrologic, Biogeochemical, and Habitat. This will allow the bank to sell and track mitigation credits under all possible mitigation

scenarios: by individual wetland function (i.e., stormwater retention), by functional group (i.e., Hydrologic), or even by acreage of wetland type if a functional assessment has not been conducted for a project site.

Credit Release

The total credits available for withdrawal from each individual mitigation bank reflect the total number of acres preserved, and their associated HGM values. In order to certify a proposed bank: the HGM functional capacity index scores for that specific bank area will be known, credit values for the bank will be defined, the area of each type of wetland will be determined, a conservation easement or legal document will preserve the properties in perpetuity, financial assurances will be in place, and the properties will be protected from all physical, chemical and biological changes. Therefore, credits for the entire bank will be available for transfer to bank customers upon adoption of the individual Bank Plans into the umbrella instrument and execution of the respective conservation easements.

Accounting Procedures

Su-Knik Environments, LLC, will be responsible for developing and maintaining a ledger of all mitigation bank accounts under the umbrella program that must be approved by the IRT. This procedure is defined in the Federal Guidance. For each bank, the ledger will document debit and credit transactions for each wetland type (riverine, slope-flat, or lacustrine), credit balances, number of credits traded per wetland type (riverine, slope-flat, or lacustrine), and track the banks' location and size. A statement of account for an individual bank will be provided to the IRT and the Matanuska-Susitna Borough after a debit or credit transaction occurs to that respective bank. Su-Knik Environments, LLC, will also provide an annual compendium of individual bank accounting reports to the IRT and the Matanuska-Susitna Borough.

Financial Assurances and Access Maintenance Plan

Each individual bank will have met its objectives upon approval of the Plan, and continued management is required. Upon approval, the conservation easement will be transferred to the agreed upon third party easement holder for long term management. The third party will monitor the property and verify that the restrictions in the easement are maintained over time.

The bank properties will be protected by a conservation easement and the easement responsibilities will be administered by a third party non-profit group. The primary cause of adverse impacts to the bank properties is expected to result from unauthorized vehicle or human traffic. The type and magnitude of permitted vehicle and pedestrian access will be defined in the conservation easement. The financial assurances created for maintenance by Su-Knik Environments, LLC, will cover the cost of monitoring for adverse impacts and responses by Su-Knik Environments, LLC, to correct unauthorized access. Su-Knik Environments, LLC, will create an escrow stewardship fund for each individual bank valued at a per credit rate. Contributions to the escrow stewardship fund will come from credit sales. The third party

conservation easement holder will be responsible for administering the stewardship funds for monitoring vehicle and pedestrian access as defined in the easement. The third party conservation easement holder will inspect the property annually for any unauthorized access.

The Matanuska-Susitna Borough will retain underlying fee-title to the properties. Su Knik Environments, LLC, will be responsible for the long term management and protection of the properties. The stewardship fund for the monitoring and management of the conservation easement, described above, is purely to maintain compliance with the management of the easement, and not for restoration or repairing unauthorized negative impacts. In the event that the third party conservation easement holder does detect unauthorized access and degradation to the properties, the third party conservation easement holder will contact Su-Knik Environments, LLC, for enforcement action.

The Su-Knik Environments, LLC, as the long term managers, will set-up a second endowment account from the revenues they receive from credit sales of the property that will be used for monitoring, enforcement, restoration, and protection purposes. Representatives from the IRT will be allowed to inspect the bank sites at any time deemed necessary to ensure that it is in compliance with the terms and conditions of the bank easement(s).

Contingency and Remedial Actions and Responsibilities

If the IRT determines that a preservation area fails to maintain the aquatic resources within each individual bank, Su-Knik Environments, LLC, will implement IRT approved procedures to address the failure. Su-Knik Environments, LLC, will conduct appropriate and specific remedial actions, on a case-by-case basis, to ensure the problem is eliminated. As noted above, Su-Knik Environments, LLC, will set up an escrow endowment account that will be funded from revenues they receive from the credit sales; if necessary, these funds will be used for these specific remedial actions. If the Corps determines that an individual mitigation bank fails to maintain baseline functions, as set forth in the mitigation bank plan, withdrawal of additional unused credits will be suspended until the problem has been addressed.

General Responsibilities of Long-term Manager

Conservation easements are being placed on the bank parcels in order to preserve the functional capacity of the wetlands in perpetuity. Su-Knik Environments, LLC, as long-term manager of the parcels, is responsible for upholding the conditions of the easements. The mitigation parcels are intended to be self-sustaining, but some active management and maintenance may be required to ensure their long-term viability and sustainability. This responsibility includes acting to both avoid and respond to functional capacity impacts.

Invasive Plants

Specific Responsibilities

The long term manager shall be held responsible for impacts to the functional capacity of wetlands on bank lands attributable to Invasive Plants. This responsibility includes taking reasonable and prudent actions to avoid the introduction and establishment of Invasive Plants on bank lands by monitoring for the presence of Invasive Plants and responding expeditiously to remove them if they are found. Invasive Plant introductions should be addressed by evaluating and monitoring transport pathways and sites susceptible to colonization, such as disturbed sites. Response actions to remove Invasive Plants from bank lands should be species-specific and proportional to the threat posed by the plant. A rapid response to the presence of Invasive Plants is important because it may not be possible to completely eradicate some species once they become established.

Contextual Definition

In the context of this Mitigation Banking Instrument, an **"Invasive Plant" is an exotic (non-native) plant that produces viable offspring in large numbers and has the potential to establish and spread in natural areas.** "Invasive Plant" specifically includes those: 1) identified by the State of Alaska as prohibited and restricted noxious weeds; 2) having a threat ranking greater than 70 from the Alaska Natural Heritage Program (AKNHP) Ranking Project; 3) identified as high priority threats by the Alaska Department of Fish and Game (ADF&G).

Explanatory Note: Monitoring of bank parcel wetlands for Invasive Plants will focus on those species considered to be high priority threats to the aquatic environment. These species include: Hydrilla (*Hydrilla verticillata*), Purple Loosestrife (*Lythrum salicaria*), Eurasian water-milfoil (*Myriophyllum spicatum*), Reed Canarygrass (*Phalaris arundinacea*), Saltmarsh cordgrass (*Spartina alterniflora*), and the various knotweeds (*Polygonum spp.*). See the following websites for the AKNHP Invasivenesss Ranking Project (http://akweeds.uaa.alaska.edu/) and ADF&G's Aquatic Nuisance Species Management Plan (www.adfg.state.ak.us/special/invasive/invasive.php).

Credit Calculation and Invasive Plants

Mitigation credits are generated and traded on the basis of protected functional capacity. A new functional assessment of bank wetlands shall be conducted to recalculate available credits in the event that Invasive Plants become established on bank parcels, and response actions to remove them have proven ineffective.

Force Majeure or Acts of God

Notwithstanding their general responsibilities, neither the Su-Knik Environments, LLC, nor the Matanuska-Susitna Borough shall be held responsible for Acts of God which impact the functional capacity of wetlands on bank lands. Nor shall either party be expected to remedy wetland functional capacity impacts directly attributable to Acts of God.

Contextual Definition

In the context of this Mitigation Banking Instrument, an **"Act of God" is an unavoidable natural event whose scale or severity precludes a reasonable or effective response.** Examples of possible Acts of God include an earthquake or other earth movement (uplift, hydrostatic rebound, etc.) which alters landscape contours or hydrology, a volcanic eruption resulting in substantial ash deposition, flood, drought, disease, regional scale invasive plant species infestations, regional insect pest infestation, acts of terrorism, acts of war, changes in hydrology or vegetation attributable to climate change, large-scale wildfire, or other events that the IRT, acting through the Chair, determines are beyond the control of the owner to prevent or prudently mitigate.

Explanatory Note: As wildfires may occur in varying size and intensity, it is important to keep the definition of an "Act of God" in mind. A two-acre fire caused by vandals burning a vehicle on a bank parcel is not an Act of God. It is not a natural event, and reasonable measures can be taken both to avoid and remedy impacts caused by it. (In all cases, responses to wetland impacts shall be proportional to the loss of functional capacity.)

Credit Calculation: Mitigation credits are generated and traded on the basis of protected functional capacity. A new functional assessment of bank wetlands shall be conducted after an Act of God for all affected parcels with available credits. Untraded mitigation credits shall be re-calculated on the basis of this new assessment. Acts of God do not affect credits traded prior to the loss of functional capacity.

General Provisions

- **Effective Date.** This mitigation banking instrument becomes effective on the date of signature by the District Engineer, Alaska District, U.S. Army Corps of Engineers, or their representative. This agreement will remain in effect for 40 years from the date of this signed document. At that time, Su-Knik Environments, LLC, the Matanuska-Susitna Borough, and the U.S. Army Corps of Engineers, or their representative, may elect to terminate or renew the agreement by mutual consent. If no election is made to terminate, the Agreement will remain in effect for periods equaling 10 years until a mutual election to terminate is made and agreed to. Any credits from approved individual banks which have been sold will be governed by this agreement and the associated acreage will continue to be protected in perpetuity by the executed conservation easement.

- **Dispute Resolution.** Dispute resolution, with regard to applying any banking instrument, shall be undertaken in accordance with the Federal Guidance. In the event of conflict between this agreement and Federal Guidance, the Federal Guidance shall control.

- **Modification.** This mitigation banking instrument may be modified in accordance with the Federal Guidance and with the written approval of Su-Knik Environments, LLC, the Matanuska-Susitna Borough, and the appropriate U.S.

Army Corps of Engineers representative. Prior to approving any modification, the District Engineer shall seek the consensus of the IRT in accordance with the Federal Guidance.

- **Responsibility.** Nothing in this agreement shall be construed as altering, or in any way limiting, any agencies or participant's ability or responsibility to act in accordance with all applicable law and regulations. An agency's undertakings pursuant to this agreement are subject to the availability of funds.

- **Authorization.** Each undersigned representative certifies that he or she is fully authorized to enter into the terms and conditions of this agreement and to execute and legally bind such party to this Agreement.

Reference

Hall, J., W. Frayer, and B. Willen. 1994. Status of Alaska Wetlands. U. S. Fish and Wildlife Service, Alaska Region. Anchorage, Alaska.
http://wetlandsfws.er.usgs.gov/status_trends/St_and_Reg_Reports/Alaska_Status.pdf