

# KUSKOKWIM RIVER MITIGATION BANK

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*Tundra Lake Bank Site*

## PROSPECTUS

September 26, 2014

***Sponsor:***

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## 1 INTRODUCTION

### 1.1 Scope of Document

Calista Corporation (Calista) submits this prospectus for an umbrella mitigation bank pursuant to 33 CFR Part 332 (2008 Rule) to provide credits as compensatory mitigation for wetland impacts within portions of the Calista Region. The proposed bank, to be called the Kuskokwim River Mitigation Bank (Bank), will initially include three very large-scale sites that together total over 23,000 acres. Calista owns each of these sites in fee simple (i.e., both surface and subsurface) and is the sponsor of the Bank. Following an affirmative evaluation by the U.S. Army Corps of Engineers (Corps) and the Interagency Review Team (IRT), this prospectus will serve as the basis for creating the Bank's draft mitigation banking instrument (MBI).

### 1.2 About Calista

Calista was established as one of the thirteen Alaska Native Regional Corporations created under the Alaska Native Claims Settlement Act of 1971 and has a long-standing history of successful land and business management. Calista represents more than 12,000 Shareholders and the Calista Region includes 56 villages, incorporated into 46 individual village corporations. The Yup'ik, Cup'ik and Athabaskan cultures of the Region are the most intact indigenous cultures in Alaska. Many residents in the Region still commonly speak their traditional languages, and most still practice a subsistence lifestyle, a primary characteristic of their economy. It is a cherished way of life, vital to the survival of Alaska Native cultures.

## 2 OBJECTIVES OF THE BANK

### 2.1 Regulatory and Ecological Objectives of the Bank

The regulatory objective of the proposed Bank is to utilize preservation of aquatic resources to provide compensatory mitigation as offsets for authorized wetland impacts that occur within the Bank's proposed service areas. Examples of these impacts include mining and development projects and associated infrastructure work that result in unavoidable wetland impacts authorized by the Corps.

The ecological objective of the Bank centers on *the preservation of three very large-scale, ecologically significant land parcels that each feature pristine wetland and headwater stream resources for the Kuskokwim River watershed.*

## **2.2 Watershed Objectives of the Bank**

Through the preservation of its sites in perpetuity, the Bank will accomplish the following fundamental watershed objectives (more detailed information is provided in Section 9 – ECOLOGICAL SUITABILITY below):

### **2.2.1 Physical Watershed Objective**

The physical watershed objective of the Bank is to preserve and protect over 21,000 acres of wetlands, approximately 1,900 acres of uplands, over 18 miles of lacustrine shoreline, and over 172 miles of streams for watershed connectivity.

### **2.2.2 Chemical Watershed Objective**

The chemical watershed objective of the Bank is to maintain the pristine water quality and beneficial storage and transformative functions provided by the wetlands and streams to be preserved.

### **2.2.3 Biological Watershed Objective**

The biological watershed objective of the Bank is to preserve, protect and thus maintain the biological processes and habitats contained within over 21,000 acres of undisturbed wetlands. This in turn provides direct riparian protection to nearly six miles of anadromous streams and an additional 167 miles of headwaters to three major anadromous rivers (Kuskokwim, Stony, and Swift).

## **3 BANK SITES AND THE FIVE CRITERIA FOR PRESERVATION**

The 2008 Rule lists five criteria for preservation to be used as compensatory mitigation. Because four of the five criteria are specific to the properties and resources to be preserved, the following overview of the three Bank sites is provided as initial reference. Additional information regarding the sites is provided in other parts of this Prospectus, particularly in Section 9 ECOLOGICAL SUITABILITY below. After the Bank site overview, each of the five preservation criteria will be addressed in turn.

### **3.1 Overview of Bank Sites**

The three Bank sites are depicted on the area map in Figure 1 (Appendix A), and their size and location characteristics are summarized in Table 1 below.

**Table 1**  
**Kuskokwim River Umbrella Mitigation Bank**  
 Summary of Preservation Properties

<u>Name</u>	<u>8-digit HUC</u>	<u>HUC Name</u>	<u>EPA Ecoregion</u>	<u>Acreage</u>
Fuller Creek	19030501	Aniak	Interior Forested Uplands and Lowlands	10,880
Tundra Lake	19030405	Stony River	Interior Forested Uplands and Lowlands	5,898
Why Lake	19030405	Swift & Stony River	Interior Bottomlands	6,383

Located in the Interior Forested Lowlands and Uplands and Interior Bottomlands ecoregions,<sup>1</sup> the three Bank sites are located within Kuskokwim River headwaters, are undisturbed by human activity, and contain no undesirable species.

The 10,880 acre **Fuller Creek** Bank site lies in the Aniak 8-digit HUC and contains 58.4 miles of headwater streams and over 9,600 acres of wetlands. The site includes 5.7 miles of Fuller Creek, a northerly flowing tributary of the Kuskokwim River located in the Kuskokwim Mountains within a region known as the Kuskokwim Mineral Belt. Fuller Creek drains 80 percent of the site and is an anadromous stream (coho salmon) with its confluence located two miles downstream from the community of Red Devil. The Fuller Creek Bank site also includes 2.3 miles of McCally Creek, a smaller Kuskokwim River tributary draining 15 percent of the site, and an unnamed tributary draining the remainder. The Bank site is elevated and up-gradient from the now closed Red Devil Mine, but contains significant mineralization as discussed in 3.2.4, below. The predominant wetland habitat is black spruce open forest and woodlands. Along its northern border (and the middle fifth of its eastern border), the site adjoins Alaska Native Claims Settlement Act (ANCSA) Native Village land owned by The Kuskokwim Corporation, for which Calista owns the subsurface rights. The remainder of the site is bounded by BLM owned lands, most of which are state selected. The Fuller Creek Bank site is located on quadrangle map and satellite

imagery in Figure 2, and its watersheds and tributary streams are depicted in Figure 3 (Appendix A).

The 5,898-acre **Tundra Lake** Bank site contains lacustrine shorelines, ponds, headwater wetlands, and over 45 miles of streams, all located within the Stony River 8-digit HUC. Tundra Lake forms the headwater of the Stink River, a tributary to the Stony River; it is identified as an anadromous lake for whitefish rearing. The Bank site contains approximately 5,839 acres of wetlands with predominant habitats being tussock tundra and black spruce woodlands. The shoreline provides nesting habitat for trumpeter swans (observed). The property surrounds three-quarters of the lake perimeter, including the outlet to the Stink River, which is catalogued as anadromous for chum, chinook, and humpback whitefish. The large majority (88%) of the site is in the contributing watershed to Tundra Lake, with the remainder contributing directly to the Stink River. The Bank site is bounded to the north and west by state owned lands, to the south by BLM lands, and to the east by Native Village (Lime Village Company) property. The Tundra Lake Bank site is located on quadrangle map and satellite imagery in Figure 4, and its watersheds and tributary streams are depicted in Figure 5 (Appendix A).

The 6,383-acre **Why Lake** Bank site also contains lacustrine shorelines, and headwater wetlands and streams in the Stony River 8-digit HUC. Three-quarters of the Why Lake site feeds unnamed tributaries to the Swift River, an anadromous stream (chinook, coho, sockeye and chum salmon). The remainder of the site contains headwaters to the Stony River, anadromous as well (chinook, coho, sockeye, humpback whitefish, inconnu, and chum salmon). The site contains nearly 5,800 acres of wetlands and over 68 miles of streams with predominant habitats being black spruce open forests and woodlands. The property completely surrounds Why Lake. The Bank site itself is in turn surrounded by BLM owned lands except for the site's southeast corner that borders state owned lands. The Why Lake Bank site is located on quadrangle map and satellite imagery in Figure 6, and its watersheds and tributary streams are depicted in Figure 7 (Appendix A).

### **3.2 Meeting the Five Criteria for Preservation as Compensatory Mitigation**

The three Bank sites were selected for inclusion in the Bank based on two important threshold criteria: 1) their ability to meet the five criteria for preservation (see below) as compensatory mitigation, and 2) their appropriateness on a watershed basis to offset potential impacts in the Donlin Creek region (see Section 6 below) as well as impacts to a variety of wetland types found in the proposed service area. (Note: while there are no existing watershed plans with respect to the proposed Bank sites or service areas, some elements of the Rapid Environmental Assessment for the Yukon

Lowlands-Kuskokwim Mountains-Lime Hills ecoregions (YKL-REA) provide useful landscape scale information, and are discussed in 3.2.4, below.)

**3.2.1 Provides important physical, chemical, or biological functions for the watershed?**

Yes; please see Section 2 above and Paragraphs 9.1.1, 9.2.1, and 9.3.1 below.

**3.2.2 Contributes significantly to the ecological sustainability of the watershed?**

Yes; please see Sections 9 and 10 below.

**3.2.3 Preservation is determined by District Engineer to be appropriate / practicable?**

In remote areas of Alaska, there is little alternative to preservation-based mitigation, as the vast majority of potential mitigation sites are pristine and undisturbed, offering no meaningful opportunity for restoration or enhancement. Thus, in the remote Calista Region with these exact characteristics, we believe that the District Engineer should continue to find preservation to be *appropriate* as mitigation, as has been determined in similar parts of the state. Subsection 6.2 below addresses why the preservation of the Bank sites is *practicable* as mitigation.

**3.2.4 Under threat of destruction or adverse modification?**

Yes.

**Fuller Creek:**

The Fuller Creek site lies in a section of the Kuskokwim Mountains that is mineralized, and thus its extensive wetland and headwater features are under direct threat of destruction and adverse modification from mining activities and related development. The mineral character of the Fuller Creek tract is well established and exhaustively documented by numerous investigations conducted over the previous 75 years or more.

The Fuller Creek Bank site lies in Township 19N, Range 45W, Seward Meridian and coincides with Subunit 16c in the *Kuskokwim Area Plan for State Lands*<sup>1</sup>. Based on a history of mineral exploration and mining, the State of Alaska characterized the area as having high potential for mineral development and proposed selection of the Fuller Creek Subunit for state ownership under the *Alaska Statehood Act*. Concurrently, the Department of Natural Resources also recommended, following conveyance to the state, disposal of up to 600 acres along Fuller and McCally Creeks for private

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<sup>1</sup> Alaska Department of Natural Resources, 1988, Kuskokwim Area Plan for State Lands: Alaska Department of Natural Resources.

ownership and settlement. In order for the lands to be settled, easements would be required to access the parcels.

Independent of the state's proposed selection and planning process, the results of several modern geochemical exploration campaigns in the area demonstrate the mineral character of the tract. Geochemical datasets collected by several mining and exploration companies, as well as Calista, show anomalous concentrations of gold (Au), silver (Ag), mercury (Hg), antimony (Sb) and arsenic (As) in surface samples of geologic material collected in the Fuller Creek and surrounding area. The presence of these metals in locally anomalous concentrations as shown in Figure 8 (Appendix A) is favorable for the occurrence of epithermal, vein and intrusive-related mineral deposits<sup>2</sup>.

Known mineral deposits and occurrences in the immediate area include the former Red Devil Mercury Mine located less than a mile east of the Fuller Creek Tract and numerous other mercury-antimony and gold prospects (Barometer, Mercury, McCally Creek, Vermillion, Fairview, and Fuller Creek, etc.)<sup>3</sup>. Thirty-six thousand (36,000) 76-

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<sup>2</sup> Calista Corporation, multiple years and ongoing, proprietary spatially related geochemical database containing geochemical data and sample descriptions generated by Calista during annual exploration and mineral assessment activities in the Calista region since circa 1980.

Hunter, Dashevsky and Snyder, 1988, Field examinations of precious metal targets on Calista Native Corporation Lands and adjacent areas, southwest Alaska, unpublished American Copper and Nickel company report, 11 p., available from Calista Corporation.

Muntzert, J., Haverslew, R.E., Hirst, P.E., Knaebel, J., and Heiner, L.E., 1974, Land and mineral resource evaluation, Calista Corporation, final report of exploration activities during 1974, Resource Associates of Alaska, 45 p.

Jennings, D., 1975, Mineral resource evaluation for Calista Corporation, final report of exploration activities during 1975, Resource Associates of Alaska, 46 p.

Thole, R.H. 1990, 1989 Red Devil Progress Report, BHP-Utah International Inc., unpublished company report, 14 p., available from Calista Corporation.

Gray, J.E., Frost, T.P., and Goldfarb, R.J., 1990, Gold anomalies associated with cinnabar-stibnite mineral occurrences in the Kuskokwim River region, southwest Alaska, a geologic note for the geologic studies in Alaska bulletin, 9 p., unpublished document, available from Calista Corporation.

Gray, J.E., Gent, C.A., Snee, L.W., and Wilson, F.H., 1997, Epithermal mercury-antimony and gold-bearing vein lodes of southwestern Alaska, in Goldfarb, R.J. and Miller, L.D., eds., Mineral deposits of Alaska: Economic Geology Monograph 9, p. 287-305.

<sup>3</sup> Bundtzen, T.K. and Miller, M.L., 1997, Precious metals associated with Late-Cretaceous-early Tertiary igneous rocks of southwestern Alaska, in Goldfarb, R.J. and Miller, L.D., eds., Mineral deposits of Alaska: Economic Geology Monograph 9, p. 242-286.

Gray, et al., 1997, *Ibid*

lb flasks of mercury were produced from the Red Devil Mine, the largest mercury producer in Alaskan history, and lesser amounts were produced from smaller deposits in the Red Devil-Fuller Creek area, including the former Barometer Mine which produced about 16 mercury flasks. Both the Red Devil and Barometer Mines are closed.

The mercury-antimony deposits commonly contain anomalous gold values and are proposed to represent upper level expressions of deeper-formed intrusive-related precious and base metal deposits in the region. Based on the geology and geochemistry of soil and rock samples from the Red Devil and Barometer Mine, BHP-Utah recommended diamond drill testing of deep targets at the two sites for potential gold mineralization<sup>4</sup>. In addition to the mercury-antimony occurrences and deposits with associated gold mineralization, there are several placer and lode gold occurrences and prospects in the area<sup>5</sup>.

#### Tundra and Why Lakes:

The Tundra Lake and Why Lake sites are under direct threat from recreational development and construction activities, as well as from the fire suppression impacts that inevitably follow such installations. The two sites were originally selected for transfer to Calista under ANSCA because the lakes provide float plane access for remote recreational development, which would encourage the construction and maintenance of cabins, lodges, support buildings, and heavily used trails for sportsmen; this activity would involve direct wetland destruction and degradation and adversely impact the important aquatic functions of the sites' valuable wetland resources. Other than Tundra and Why Lakes, there are relatively few lakes in the region with surrounding property suitable for remote recreational development, making the likelihood of this use relatively high.

Even a small amount of development on these sites will have an outsized adverse impact from resultant and required fire suppression. The impetus for fire suppression is the protection of life and property, and is politically irrepressible. The [Alaska](#)

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<sup>4</sup> Thole, R.H. 1990, *Ibid*

<sup>5</sup> Miller, M.L., Belkin, H.E., Blodgett, R.B., Bundtzen, T.K., Cady, J.W., Goldfarb, R.J., Gray, J.E., McGimsey, R.G., and Simpson, S.L., 1989, Pre-Field study and mineral resource assessment of the Sleetmute Quadrangle, southwestern Alaska, USGS Open-file Report 89-363, 115 p.

Gray, et al., 1997, *Ibid*

Kurtak, J., Hoppe, J. and Ellefson, R., 2010, Mineral Occurrence and development potential report; locatable and salable minerals, Bering Sea-western interior resource management plan, U.S. Bureau of Land Management Alaska Technical Report 60, 261 p.

[Interagency Fire Management Plan](#) provides for a full range of suppression responses from aggressive control and extinguishment to surveillance.<sup>6</sup> Where property and human life are not threatened, the lowest level of protection is warranted. The Plan states, “Surveillance is an acceptable response as long as higher valued adjacent resources are not threatened.”

Fire suppression is a threat to boreal forest hydrology where permafrost maintains high water tables. Suppression allows higher fuel accumulations that exacerbate the intensity and damage from wildfires when they inevitably occur. Intense fires reduce the thickness of the organic soil layers that are providing the necessary insulation to maintain permafrost.

The Alaska Natural Heritage Program in cooperation with Bureau of Land Management, the Institute for Social and Economic Research, and the Scenarios Network for Alaska Planning (SNAP) recently completed (mid-2014) a Rapid Environmental Assessment (REA) for the Yukon Lowlands-Kuskokwim Mountains-Lime Hills ecoregions.<sup>7</sup> This YKL-REA identified fire as a key future issue as the region adjusts to climate change over the next 50 years, saying that:

- Increases in fire frequency may accelerate the thaw of permafrost in the region, given that in areas where burns are severe and the organic layer is consumed, more rapid thaw has been observed immediately afterwards.<sup>ii</sup>
- In cases where most of the organic layer burns during an intense fire, subsequent heat transfer to the ground will be increased.
- Thus, estimates of permafrost thaw are likely to be conservative [more thaw than predicted] in areas projected to be strongly influenced by fire.

### **3.2.5 Permanently protected through appropriate real estate / other legal instrument?**

Yes; Calista owns each of the Bank sites in fee simple and will protect these sites in perpetuity by granting a conservation easement to a conservation-purposed, non-profit third-party entity. The easement will restrict surface and subsurface activity detrimental to the ecological value of the sites.

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<sup>6</sup> <http://forestry.alaska.gov/fire/fireplans.htm>

<sup>7</sup> Alaska Natural Heritage Program *et al.* 2013. <http://aknhp.uaa.alaska.edu/landscape-ecology/ykl-rea/products/#content>. See Abiotic Agents Webinar slides.

## 4 ESTABLISHMENT AND OPERATION

As outlined above, the Bank will be established utilizing appropriate conservation easements on the Bank sites that are owned fee-simple by Calista. By preserving the Bank sites in perpetuity through the terms of these easements, the Bank will conserve important wildlife and fishery resources, as well critical aquatic resources including headwater wetlands, anadromous and headwater streams, shorelines and river banks.

Calista has partnered with KRB/EarthBalance (EarthBalance) to permit and operate the proposed Bank. EarthBalance will provide technical and strategic consulting with respect to the long-term management and monitoring of the Bank. While EarthBalance will provide these management services, the project and underlying property will be owned by Calista, which will retain responsibility for the long-term stewardship of the Bank property.

More details regarding the conservation easements and the Bank establishment and operation are provided in Section 7 below.

Following approval of the prospectus, the establishment and operation of the Bank will be further detailed in the MBI; accordingly, the MBI will include information regarding the Bank's credit accounting procedures, reporting protocols, sponsor legal responsibility provisions, financial assurance mechanisms, closure provisions, adaptive management plan, credit release schedule, site protection features, and other information deemed necessary by the Corps and IRT.

An important operational feature of the Bank will be a reservation letter system with respect to its credits and their use by permit applicants. Accordingly, when an applicant desires to rely upon the Bank's credits as mitigation in its permit submissions to the Corps, the Bank will first have those credits reserved by the applicant once such an agreement has been reached. The Bank will confirm this reservation by a written letter to the applicant, with a copy delivered to the Corps. This reservation system will provide needed assurances as to the mitigation proposed by the applicant and will preclude miscommunication between the Bank, the Corps, and the applicant. Once the reservation is in place and confirmed by letter, the applicant is assured the credits will be available when needed and, as importantly, the Corps has the reasonable assurance that the required credits (1) have been transacted for, (2) will be reserved by the Bank, and (3) will actually be withdrawn from the Bank to offset the applicant's impacts in the manner permitted. In so doing, the Bank's reservation system will provide the Corps with an important supplement to its RIBITS ledger, which does not indicate the commitment of credits prior to their actual transfer. Thus, only if the Corps has received a relevant reservation letter from the

Bank can the Corps be assured that the permittee has secured the needed credits (and thus the mitigation) stated in its applications. As set forth in the features outlined above, the reservation letter process allows for the most effective operation of the Bank in terms of the efficient management of its mitigation credit inventory and providing the assurance to the Corps required in § 332.3(k)(4).

## **5 PROPOSED SERVICE AREA**

### **5.1 Primary Service Area**

The primary service area for the Kuskokwim River Mitigation Bank would be the following three 8-digit HUCs: 19030404, 19030405, and 19030501, as depicted in Figure 9 (Appendix A). These three HUCs contain all three of the proposed Bank sites and the proposed Donlin Gold mine site. Broadly speaking, the primary service area would include the portions of the middle Kuskokwim River (bounded by the lowland coastal plains to the west and the Alaska Range to the east) rich with tributary streams, lakes, and headwaters. Two closely related ecoregions are included: the Interior Forested Lowlands and Uplands and Interior Bottomlands.

### **5.2 Secondary Service Area**

As depicted in Figure 10 (Appendix A), the secondary service area of the Bank would be HUCs 190304 and 190305 that together represent the Kuskokwim River watershed from its headwaters to the point that halophytic plants dominate the floodplain. The secondary service area includes two 6-digit HUCs as the Kuskokwim is divided between upper and lower stretches. The Bank site preservation parcels are in the headwaters of both 6-digit HUCs, ensuring the benefits of preservation are received downstream. The secondary service area is 38,715,136 acres, of which approximately 14,141,425 acres, or 36.5%, are in the primary service area.

## **6 NEED FOR AND TECHNICAL FEASIBILITY OF THE BANK**

### **6.1 Need for the Bank**

Large-scale wetland impacts from mining activities are anticipated within the proposed service area of the Bank, including those that would result from the Donlin Gold project should it meet all of its permitting requirements. If the Donlin Gold project is implemented, secondary and cumulative impacts from this activity are also anticipated to require mitigation offsets, including those expected from the proposed Donlin natural gas pipeline. Independent of the outcome of any specific mine permit,

the Bank's service area contains vast, proven reserves of highly valuable mineral resources that are eventually expected to be extracted and thus require large-scale mitigation. Additional wetland impacts that require mitigation are expected from public infrastructure projects such as runway extensions, road construction/widening, and public facility construction such as schools, sanitation and power generation facilities.

Thus the need is clear for wetland mitigation to offset impacts from the development of natural resources and public infrastructure critical to the prosperity of the Calista Region. And the importance of such economic development, and the jobs that this development brings, cannot be overstated. The Region as a whole is economically challenged, with over 21.5% of the population living below the poverty level when last measured. Unemployment in the area is commensurately high; while wage employment is increasing, it is not enough to fully support residents.

Currently, there are no mitigation banks permitted for any watershed within the Calista Region. Further, apart from Calista owned lands, very little suitable property is available to provide offsite mitigation for development-scale wetland impacts within the service area, whether in the form of permittee-responsible mitigation or, importantly, to fulfill the advance credits of permitted in lieu fee programs. This makes the proposed Bank the only real option for needed off-site mitigation for all but smaller scale projects.

To understand the limits of suitable mitigation property, consider that while the Calista Region encompasses 57,000 square miles (roughly the size of Illinois), the land entitlement to Calista is much smaller – 10,000 square miles – only about 20 percent of the land area. Approximately 75 percent of the land within the Region is owned by the U.S. Fish and Wildlife Service. Most of the remaining non-Native lands are held by federal and state governments, with only a very small amount privately owned. And for private land owned by Alaska Native Village Corporations, split estates are common. This lack of subsurface ownership creates an obvious obstacle to the site protection required by the 2008 Rule. Effectively then, Calista lands are the only practical source for offsite mitigation within the Region. Calista notes the hierarchy preference for mitigation banks set forth in the 2008 Rule and desires to use its lands to establish a mitigation bank as the preferred mitigation option within the relevant service areas.

Compensatory mitigation for losses of aquatic resources is governed by the 2008 Rule, which requires applicants to employ a "watershed approach" to the extent appropriate and practical in addressing compensatory mitigation requirements. A watershed approach uses a landscape scale perspective to identify potential locations

and types of compensatory mitigation projects that will benefit the watershed and offset any authorized losses of aquatic resources. As noted, there are significant obstacles to finding “landscape scale” properties suitable for mitigation. The lack of large-scale properties with all rights intact would be an obstacle for any applicant, and especially for applicants operating on the scale of large mining projects such as the proposed Donlin Gold mine. The Bank is designed to solve this obstacle by preserving large properties of private land with whole (fee-simple) estates.

It is worth adding that, without an approved mitigation bank serving the proposed service area, each permit applicant impacting wetlands would have to develop its own mitigation plan to meet federal requirements, increasing costs, review time, and compliance issues. Each unique mitigation plan submitted by an applicant not only burdens the applicant with locating and securing appropriate individual mitigation property, but also increases the review and compliance burden on Corps permitting staff. Numerous studies have demonstrated that a properly regulated wetland mitigation bank provides a win-win solution for both permittees and regulators in terms of time, expense, and efficacy of compensation. The Bank seeks to anticipate and meet these needs within its service area.

## **6.2 Technical Feasibility of the Bank**

Preservation of the proposed Bank site properties is highly feasible and practicable because of the following characteristics of each site:

- **Combined Estates:** Calista owns the full fee interest in all of the Bank sites, including both the surface and subsurface rights. Ownership of both rights allows the conservation easements granted by Calista to protect fully the ecological value of the habitats and lands in perpetuity.
- **Remoteness:** The Bank properties are remote from nearby settlements and experience minimal (if any) human disturbance as a result. All properties lack surface road access.
- **Substantial Size:** Each property is large enough to be self-buffering and self-sustaining. Additionally, the properties are of a shape that minimizes the amount of perimeter protection required.
- **Pristine Condition:** With the exception of a small cabin on an in-holding in the Tundra Lake property, there is no evidence of human degradation. Each of the sites is currently fully functional and in a pristine state.

## **7 OWNERSHIP ARRANGEMENTS AND LONG-TERM MANAGEMENT**

The Fuller Creek Bank site is owned in fee simple by Calista and is described as a 10,880 acre tract within the Fuller Creek watershed, comprising Sections 1, 2, 3, 10-17 inclusive, 20, 21, 22, 27, 28, 29, Township 19 North, Range 45 West, Seward Meridian, Alaska. This tract was conveyed to Calista Corporation in Patent Number 50-2013-0012.

The Tundra Lake Bank site is described as an approximately 5,898-acre tract comprising the northern, western and southwestern shoreline of Tundra Lake including its outlet, in Sections 2-7, and 16-21, Township 13 North, Range 36 West, Seward Meridian, Alaska. The parcel was conveyed to Calista in Interim Conveyance #2280 and is owned in fee simple. The parcel does not include the lake bottom. Two privately-owned, Alaska Native allotment lake-front parcels within the larger tract are also excluded. These parcels are relatively small: one is approximately 40 acres, the other approximately 33 acres. Minimal if any Tundra Lake site disturbance is expected from these vacant parcels as they have no road or trail access rights through the Tundra Lake property and must be accessed from the lake by float or ski-equipped plane or snow machine. There are no known plans to develop these small parcels which are trust lands protected by the Bureau of Indian Affairs.

The Why Lake Bank site is described as a twelve-square-mile tract surrounding Why Lake and its outlet, in Sections 16-21, and 28-33, Township 17 North, Range 35 West, Seward Meridian, Alaska. This 6,383 acre parcel was conveyed to Calista in Patent #50-2009-0392 and is owned in fee simple. The parcel does not include the lake bottom.

Calista will remain the fee simple owner of these three Bank site parcels subsequent to the conveyance of the conservation easements and, as sponsor, will be the party responsible for the successful long-term management of the Bank properties. Calista intends to convey the easements to a conservation-purposed, non-profit third-party entity to hold and enforce in perpetuity. Positive preliminary discussions have occurred with The Great Lands Trust, which has experience holding conservation easements for other mitigation banks in Alaska.

The conservation easements will prohibit surface and subsurface uses that are inconsistent with maintenance of undisturbed natural ecosystems. (Thus, and importantly, subsistence use by Native Alaskans will be allowed, protected and preserved.) Proceeds will be set aside from credit sales into a long-term trust, the earnings of which will provide for the cost of maintaining the property in perpetuity.

The long-term management strategy is to preserve the Bank sites with protective conservation easements and sufficient endowment to provide long-term monitoring, reporting, maintenance, and stewardship. In conjunction with the Corps and the IRT, details for the long-term management plans for the Bank sites will be developed in the draft MBI as is prescribed in § 332.7(d).

## **8 QUALIFICATIONS OF THE SPONSOR**

Calista Corporation is the sponsor of the Bank. Calista is the fee owner of the lands being used by the Bank and is among the largest of the Alaska Native Regional Corporations.

Calista owns more than two dozen subsidiary companies held in five business lines, including companies that provide rural camp and military base services; rural and urban construction (including heavy civil and arctic construction); environmental remediation and range reclamation; ocean and shallow-draft river marine transportation; real estate investments; telecommunications, website development and security, and several more. In addition, for over forty years Calista has successfully managed thousands of square miles of Alaska land and in so doing has developed extensive experience with all aspects of property management and sound stewardship. From these successful experiences, Calista has developed in-depth staff expertise in land management, budgeting, planning, field assessments, legal matters, financial analysis, and business management, partnering, and contracting. Based on its experience and expertise, as well as its deep understanding of regional issues, Calista is very well suited and qualified to serve as sponsor of the Kuskokwim River Mitigation Bank.

Calista has partnered with KRB/EarthBalance Corporation (EarthBalance) to permit and operate the proposed Bank. EarthBalance will also provide technical and strategic consulting for the Bank. Founded in 1985, EarthBalance is an environmental consulting firm specializing in mitigation analysis and mitigation banking, as well as comprehensive ecosystem restoration services. The company provides ecosystem maintenance, monitoring, and restoration services for its own mitigation banks, other private mitigation banks, the U.S. Fish & Wildlife Service, the National Park Service, the U.S. Army Corps of Engineers (Mobile, Jacksonville, and Charleston Districts), the U.S. Navy and U.S. Air Force and numerous local governments and special districts.

EarthBalance's professional consulting staff is comprised of degreed wetland scientists, ecologists, and biologists with diverse experience in ecosystem restoration and environmental consulting, including experience in Alaska. In addition to its broad environmental consulting expertise, EarthBalance has for many years owned and

operated four wetland mitigation banks, and is currently permitting its fifth. The Company provides all permitting, maintenance, restoration, monitoring, consulting, implementation, and marketing services for each of its mitigation banks. All EarthBalance banks have successfully earned credits based on preservation and performance-based ecological criteria, and each is in good standing with state and federal agencies. Additional information regarding EarthBalance is available at [www.EarthBalance.com](http://www.EarthBalance.com).

## 9 ECOLOGICAL SUITABILITY

As detailed below, each of the Bank sites is ecologically suitable to achieve the objectives set forth in Section 2 of this Prospectus. Each property is undisturbed and of the size and shape to be self-buffering and self-sustaining. There is no historic or current use of the three Bank properties as each sits in its natural, undisturbed state where it provides subsistence hunting and fishing resources for Native Alaskans. (Note: there is no zoning ordinance, or even a zoning body, with respect to any of the Bank sites.) Importantly, all of the wetland systems and resources found within the properties are pristine and fully functioning.

*Please refer to Subsection 3.1 above for key information regarding the Bank sites' aquatic functions and resources, including descriptions of each property's wetland and stream attributes.* The following provides additional details as to the important biological, chemical, and physical functions and resources supported by each of the three Bank sites.

All of the Bank sites have soils of the Gelisol order, which are characterized by the accumulation of fibrous organic material in the A horizon, also called the O horizon. The depth of the O horizon varies with aspect and slope position. Where the O horizon is relatively thick (12 to 18 inches), there is evidence of gelifluction on slopes. The Gelisols are circumpolar and are a large sink for the global carbon budget. In headwaters these soils allow precipitation to filter through the organic layer, which adsorbs airborne pollutants, such as mercury. By maintaining the complex of soil organic layer and permafrost that exist today, preservation of the Bank sites would protect the O horizon from disturbances that would cause its thinning, with the concomitant release of carbon dioxide and reduction of water filtration function. As discussed more fully in Paragraph 3.2.4 above, minimal development can have far reaching adverse effects that would ultimately degrade the streams.

The U.S. Environmental Protection Agency (EPA) and the Corps have issued a proposed rule for the definition of "waters of the United States," supported in large part by the EPA Office of Research and Development's (ORD) synthesis of peer-

reviewed scientific literature in a report titled, “Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence” (“the ORD Report”). The proposed rule includes summary findings and conclusions from the ORD Report, which represent the agencies’ current position on the technical matters addressed. To reduce redundant documentation, we reference the proposed rule as source authority for the value and importance of headwater wetlands and streams as described in this Section 9. (Note: no jurisdictional determination of “waters of the U.S.” has been made with respect to the three sites.)

All of the Bank sites preserve headwaters to anadromous streams, including the Kuskokwim River. Figure 11 (Appendix A) shows how each of the sites lies in a headwater position to anadromous streams in the Kuskokwim River watershed. As detailed below for each site, over 21,000 acres of headwater wetlands will be preserved, along with over 170 miles of headwater streams. Headwater wetlands protect downstream water quality and hydrology by attenuating and filtering the release of runoff following precipitation and snowmelt, providing cation exchange sites for the adsorption of pollutants from atmospheric deposition.

Headwater wetlands and streams originate more than half the flow for most rivers, and provide important downstream benefits. Headwater and riparian wetlands provide storage that modulates streamflow velocities and sediment loads, including woody debris. Uplands associated with wetlands and streams provide inputs of organic carbon, nutrients, sediments, and woody debris.

Wetlands generally act as sinks and transformers for various pollutants, especially nutrients, which may enter wetlands through dry and wet deposition. Tributaries transform and export nutrients and organic carbon to downstream waters in ways that contribute to the chemical integrity of these waters.

Tributaries and wetlands are biologically linked through the movement of organisms or their reproductive propagules, either by drifting with current or by active movement. Headwaters increase the amount and quality of habitat available to aquatic organisms. Uplands surrounding headwater and riparian wetlands and headwater streams are habitats for organisms that move between upland and aquatic habitats, providing transport of nutrients and organic carbon, and are important resources in their own right.

Vegetation for each Bank site has been mapped by Boggs et al.<sup>8</sup> based on classifications developed with various federal agencies (primarily, the Bureau of Land Management, and U.S. Fish and Wildlife Service) for most of Alaska using a variation of the Viereck et al.<sup>9</sup> classification. The classification system used in the map legends generally corresponds to the more detailed description of these plant communities and their association with each other in Appendix B.

Each of the Bank sites provides wetland and upland habitat for black and brown bear, moose, caribou; numerous smaller mammals, such as beaver, mink, ermine, hoary marmot and voles; various seasonal and resident birds; and top predators, like wolves, coyotes, wolverine, lynx, and red fox.

## 9.1 Fuller Creek Bank Site

### 9.1.1 Physical, chemical, and biological characteristics

The Fuller Creek site is a large mountainous tract in the Kuskokwim Range comprising the majority of the headwaters of Fuller and McCally Creeks, both of which are tributary to the Kuskokwim River. The predominant wetlands are black spruce forests with concomitant shrub communities. Fire scar is mapped for over a third of this site. (See Figure 12 in Appendix A)

Fuller Creek is an anadromous stream confirmed for coho salmon rearing. The creek is approximately 12 miles in length with about 300 feet of fall across the 5.7 miles contained within the Bank property, resulting in an incised channel with fast flows. Associated alluvial deposits support herbaceous and tall shrub communities. McCally Creek is approximately 3 miles in length with nearly the entire watershed and 80 percent of the stream channel included in the Fuller Creek tract.

In addition to the suite of species associated with the boreal forest and interior bottomlands cited above, the nearby Kuskokwim River bluffs provide nesting sites for a recovering population of peregrine falcons (*Falco peregrinus*). In 2004 Seppi<sup>10</sup> documented 19 nesting pairs along the middle Kuskokwim, along with observations of nesting rough-legged hawks (*Buteo lagopus*) and foraging osprey (*Pandion haliaetus*) and bald eagles (*Haliaeetus leucocephalus*). The presence of predatory birds along the middle Kuskokwim underlines the importance of maintaining water filtration of

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<sup>8</sup> Boggs, K., T.V. Boucher, T.T. Kuo, D. Fehring, and S. Guyer. 2012. Vegetation map and classification: Northern, Western and Interior Alaska. Alaska Natural Heritage Program, University of Alaska Anchorage, Anchorage, Alaska. 88 pgs

<sup>9</sup> Viereck, L.A.; Dyrness, C.T.; Batten, A.R.; Wenzlick, K.J. 1992. The Alaska vegetation classification. Gen. Tech. Rep. PNW-GTR-286. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 278 p.

<sup>10</sup> Seppi, B.E. 2007. BLM Alaska Open File Report 117

headwater wetlands to minimize the bioaccumulation of airborne toxins such as mercury.

### **9.1.2 Land encumbrances**

The Fuller Creek bank site contains a 50 ft. wide access easement that allows for trail traverse along the northern border of the property to access state owned lands to the west from the Kuskokwim River. This easement is not currently in active use and would not meaningfully impact the site if it were. There are no other easements or right of ways. The property is not subject to any liens or mortgages.

## **9.2 Tundra Lake Bank Site**

### **9.2.1 Physical, chemical, and biological characteristics**

The Tundra Lake tract is a large, relatively flat to hilly tract partially surrounding Tundra Lake. Aptly named, the land around Tundra Lake supports tussock tundra communities (> 20%) with heavy accumulations of organic soils and mosses overlying and protecting what is likely continuous permafrost. Where trees can persist, the predominant community is black spruce woodlands (~ 43%). Most of the remaining area is primarily dominated by low and dwarf shrub communities that grade to herbaceous communities in the wetter areas. (See Figure 13 in Appendix A)

The entire Tundra Lake tract drains to the Stink River, mostly through Tundra Lake. There are approximately 9.8 miles of shoreline, 46 miles of headwater streams and 5,839 acres of wetlands that would be protected on the site.

In addition to the suite of species associated with the boreal forest and interior bottomlands cited above, trumpeter swans have been observed during the summer nesting season. The Stink River and Tundra Lake are anadromous waters documented for whitefish rearing. The site is within the reported migratory range of the Mulchatna caribou herd.

The site provides water quality and water quantity benefits to Tundra Lake and the Stink River, which is the connection between Tundra Lake and the Stony River.

### **9.2.2 Land encumbrances**

The Tundra Lake site contains two 25 ft. wide access easements that allow for trail crossing for passengers from float plane landings in the lake to adjacent state owned lands. There are also two corresponding one acre site easements that permit overnight camping (but not recreational or continuous use) to allow for changes in mode of transportation from water-borne to ground-based and vice-versa. These easements are not currently in active use and would not meaningfully impact the site if they were. There are no other easements or right of ways. The property is not subject to any liens or mortgages.

## **9.3 Why Lake Bank Site**

### **9.3.1 Physical, chemical, and biological characteristics**

The Why Lake site is a large mountainous tract that mostly drains into Why Lake, which drains through an unnamed tributary eastward into the Swift River. About a quarter of the property drains westward to the Stony River. The site contains numerous drainage features dominated by mixed needleleaf-broadleaf forests and tall shrub. Herbaceous and dwarf and low shrub communities dominate the north and south ends of the lake where alluvial deposits have created a less steep terrain. (See Figure 14 in Appendix A)

The steep topography gives rise to 68 miles of headwater streams, and a rich mosaic of vegetative communities from the tops of ridges to the 8.4 miles of lake shore. Because most of the relatively steep site drains to Why Lake, the vegetation and soils are important in modulating potentially erosive flows to the lake, which in turn provides a buffer between storm and snowmelt runoff and the Swift River.

In addition to the suite of species associated with the boreal forest and interior bottomlands cited above, spruce grouse and moose have been observed at the site. Both species are widely dispersed and expected for the area, but the moose were observed foraging in the shallow lake margins where they would be expected to be concentrated during the summer.

### **9.3.2 Land encumbrances**

The Why Lake property contains a 25 ft. wide access easement that allows for trail crossing for passengers from float plane landings in the lake to adjacent public lands. There is also a corresponding one acre site easement that permits overnight camping (but not recreational or continuous use) to allow for changes in mode of

transportation from water-borne to ground-based and vice-versa. These easements are not currently in active use and would not meaningfully impact the site if they were. There are no other easements or right of ways. The property is not subject to any liens or mortgages.

## **10 HYDROLOGICAL INFLUENCES TO SUPPORT LONG-TERM SUSTAINABILITY**

As each of the three Bank sites comprises headwater streams, the predominant water source is precipitation. The wetland systems within the three Bank sites are undisturbed and fully functioning with no existing or anticipated hydrologic disturbances. Thus, there is no need for temporary or long-term structural management requirements (levees, weirs, culverts, etc.) to achieve hydrologic/vegetative restoration. Further, because separate and distinct water rights do not exist in the Calista Region, the hydrologic stability of the Bank sites is not subject to such external water claims. Taken together, the hydrologic features of the Bank sites provide excellent support for their long-term sustainability.

## **11 NAMES OF ADJACENT PROPERTY OWNERS**

### **Fuller Creek Site:**

Alaska Department of Natural Resources  
Div. of Mining Land and Water  
Robert B. Atwood Building  
550 W. 7<sup>th</sup> Avenue, Suite 1260  
Anchorage, AK 99501-3557

BLM  
Anchorage District Office  
4700 BLM Road  
Anchorage, AK 99507

The Kuskokwim Corporation  
Maver Carey, CEO  
4300 B Street, Suite 207  
Anchorage, Alaska 99518

### **Tundra Lake Site:**

Alaska Department of Natural Resources  
(see above)

BLM  
(see above)

Lime Village Company  
Nancy Bobby, President  
P.O. Box 92813  
McGrath, Alaska 99627

Outlot#1:  
Helen B. Dick  
Lime Village, Alaska 99627

Outlot#2:  
Angie Grant (owner representative)  
4165 Horizon Avenue  
Anchorage, Alaska 99517

**Why Lake Site:**

Alaska Department of Natural Resources  
(see above)

BLM  
(see above)

## ENDNOTES

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<sup>i</sup> We use the Level III Ecoregions of Alaska developed by USGS and EPA, which is cited as: Gallant, A.L.; Binnian, E.F.; Omernik, J.M.; and Shasby, M.B. 1995. Ecoregions of Alaska. U.S. Geological Survey Professional Paper 1567, 73p. It is slightly different from the Unified Ecoregions of Alaska, developed cooperatively by the U.S. Forest Service, National Park Service, U.S. Geological Survey, The Nature Conservancy, and personnel from many other agencies and private organizations and is cited as: Nowacki, Gregory; Spencer, Page; Fleming, Michael; Brock, Terry; and Jorgenson, Torre. Ecoregions of Alaska: 2001. U.S. Geological Survey Open-File Report 02-297 (map). Both maps are highly similar and useful, but in our opinion the map of Level III Ecoregions of Alaska best characterizes the interior forests of the Kuskokwim River watershed.

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# **APPENDIX A**

## **MAPS**