Trustee Council Use Only
Project No: ____
Date Received: ____

GEM PROPOSAL SUMMARY PAGE

(To be filled in by proposer)

Project Title:	ShoreZone mapping for Kodiak Island
Project Period:	FY05-FY06
Proposer(s):	Susan M. Saupe, Cook Inlet RCAC, saupe@circac.org
Study Location:	Kodiak Island archipelago

Abstract: This project would complete a Kodiak ShoreZone mapping program initiated in 2002 by the EVOSTC and the Cook Inlet RCAC by mapping the rest of the Kodiak Island archipelago following the existing Alaska ShoreZone Mapping Protocols (Harper and Morris 2003). Aerial Video Imagery (AVI) would be collected in two 6-day surveys and would be the primary source for completing the subsequent biophysical mapping database of intertidal and shallow subtidal areas. These data will complement the 1600 km of existing mapping on Kodiak and the 7000 km so far within the GEM area. In addition to the agency and researcher support that ShoreZone has gained in Alaska--- most specifically to provide needed GEM-area habitat data---there was significant community support for completing the coastal mapping shown during a recent workshop (15 March 2004) in Kodiak when the ShoreZone mapping data and products completed to date were described and demonstrated.

Funding:	EVOS Funding Requested:	FY 05	$ 201.3	
	(must include 9%GA)	FY 06	$ 201.9	
		FY 07	$	
				TOTAL:
	Non-EVOS Funds to be Used:	FY 05	$	
		FY 06	$	
		FY 07	$	TOTAL:
Date:	15 April 2005			

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I. NEED FOR THE PROJECT

A. Statement of Problem

ShoreZone Mapping has been implemented on about 7,0000 km of coastline in the Gulf of Alaska over the past three years (Fig. 1) following a 2001 pilot program initiated by the Cook Inlet Regional Citizens Advisory Council (RCAC). ShoreZone is providing coastal habitat data that has been lacking for most of Alaska. A variety of agencies have subsequently funded the mapping efforts in the Gulf of Alaska (Table 1). However, there are several large gaps within the GEM-area that keep the data from being a potential one-source, contiguous nearshore habitat dataset. This Kodiak ShoreZone mapping proposal would complete a program initated in the Kodiak area in 2002 and provide a contiguous dataset for the entire archipelago. In addition, it will dove-tail neatly with the ShoreZone mapping sponsored to date by the Cook Inlet RCAC and/or the EVOSTC for Cook Inlet (including Kamishak and Kachemak Bays), the outer Kenai Peninsula coastline, and the northern Gulf of Alaska as far east as the entrance to Prince William Sound. Future efforts by EVOSTC to coordinate all ShoreZone projects (including those sponsored by the National Park Service and planned efforts by NOAA and potentially The Nature Conservancy in southeast Alaska) could lead to ALL of the contiguous datasets being available in a one-source database and web-site.

The ShoreZone mapping approach is based on the same protocol used throughout Washington and British Columbia (WaDNR 2000; Harper and Berry 2001; Howes 2001). However, several modifications and additional components were added during the pilot program that have been carried into the Alaska Shorezone Protocols for the Gulf of Alaska (Harper and Morris 2003). Aerial video imagery is collected during the lowest tides of the year and this imagery, along with field observations by a geomorphologist and coastal ecologist, provides the primary data for the mapping.

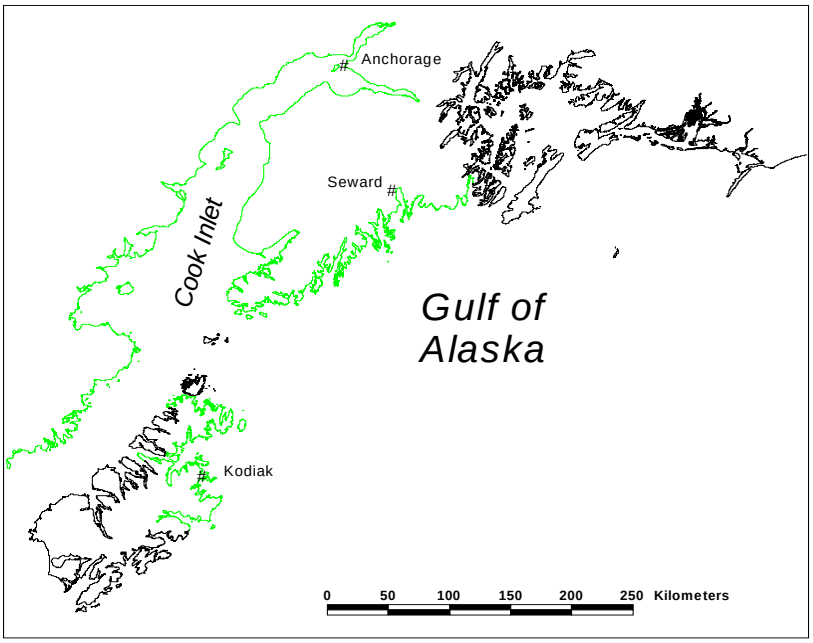

Figure 1 Existing ShoreZone mapping coverage (green) in the oil spill impact region.

Nearshore habitat data has been identified as key information needed to move forward with nearshore monitoring in the GEM program. In addition, numerous other organizations have noted a lack of coastal habitat data for their various needs (e.g. Resource agencies for inventorying habitats important for specific species, Cook Inlet RCAC for conducting shoreline risk assessments for oil spills). There is still a need for systematic high resolution, low-tide imagery on much of the Kodiak Island

archipelago, as well as a segment-by-segment data inventory of key physical and biological shore zone features. The existing Environmental Sensitivity Index (ESI; NOAA 2000; see also Ruby *et al* 1979, and Issacs Associates 1985) maps occur within the region but do not include web-posted imagery, are of much lower resolution than ShoreZone, are not web accessible and are not of sufficient resolution for ecosystem monitoring. The ESI maps are only partially available in a digital format throughout the GEM region; they do not include explicit exposure, substrate, morphology or biotic data, as does the ShoreZone mapping data. Additionally, ShoreZone data include a detailed across-shore characterization of morphology, substrate type and biota. The ShoreZone mapping system also provides the benefit of the public availability of the digital video imagery in conventional formats (VHS tapes or DVD) or web-based images (see the beta-test site at www.coastAlaska.net).

Table 1 Summary of ShoreZone Projects, Gulf of Alaska (2001 to 2004)

Year	Location	Project Activity	Funding
2001	lower Cook Inlet	Aerial imaging; pilot mapping; web-posting of imagery	CIRCAC
2002	outer Kenai, western Cook Inlet	aerial imaging; mapping,; web-posting of imagery	CIRCAC/KPB
	outer Kenai	aerial imaging; mapping; web-posting of imagery	EVOS/NPS
	outer Kenai	shore stations – ground-truthing	CIRCAC/KPB
	Kodiak	aerial imaging; web-posting	EVOS
2003	Upper Cook Inlet	aerial imaging; mapping; public awareness	USFW/CIRCAC
	Katmai National Park	aerial imaging, mapping; web-posting; ground station survey	NPS/CIRCAC
	Aniakchak National park	aerial imaging; mapping; web-posting	NPS/CIRCAC
	Kodiak	mapping 2002 imagery; workshop in Kodiak	CIAP/CIRCAC
	Gulf of Alaska	coastal users workshop; development of a ShoreZone mapping protocol	EVOS
	Gulf of Alaska	development of shore station database; web-posting	CIRCAC
2004	Gulf of Alaska	development of a website for access to ShoreZone imagery and data	EVOS/CIRCAC
(proposed)	SE Alaska	ShoreZone imaging and mapping	NMFS/Auke Bay
(proposed)	Gulf of Alaska	aerial video imagery tape sales	SeaGrant, U of A

Funding Sources Above:

CIRCAC	Cook Inlet Regional Citizens Advisory Council
EVOS	Exxon Valdez Oil Spill Trustee Council
KPB	Kenai Peninsula Borough
USFW	US Fish and Wildlife Service
NPS	National Park Service
CIAP	Alaska Coastal Impact Assistance Program
NMFS	National Marine Fisheries Service
TNC	The Nature Conservancy

B. Relevance to GEM Program Goals and Scientific Priorities

The completed ShoreZone project will provide high-resolution data on physical and biological resources throughout the GEM project region. It is expected that the ShoreZone dataset will contribute substantially by providing a spatial framework for more detailed monitoring studies, by augmenting trustee agencies resource management information for oil spill response and by raising public awareness to coastal resources.

The proposed Kodiak ShoreZone mapping project addresses the GEM Mission (inset, right) in a number of specific ways. The project is particularly relevant to three of the GEM goals:

> ***GEM Mission Statement***
> Sustain a healthy and biologically diverse marine ecosystem in the northern Gulf of Alaska (GOA) and the human use of the marine resources in that ecosystem through greater understanding of how productivity is influenced by natural changes and human activities.

1. *Understanding* - by providing a near synoptic, high-resolution picture of coastal resource distribution throughout the Gulf, spatial variation in biological resources will be related to important physical constraints (substrate, exposure, water quality) as well as man-made impacts (harvesting, seawall construction). For example, during the 2002 surveys, spatial variation in the distribution of chitons (visible during the survey!) could be related to subsistence harvesting near villages (e.g., Port Graham).

2. *Informing* - the data products associated with the Kodiak ShoreZone proposal provide immediate public access to imagery, often the only low-tide imagery available, and short-term access to synthesized mapping data in GIS format; previously imaged shoreline of Kodiak has been publicly web-posted for two years. Previous experience in the state of Washington and the Province of British Columbia indicates that the ShoreZone data will be utilized by a wide range of resource agencies for shore-spawning fish habitat assessment (Washington Department of Fish and Wildlife), for bird habitat capability (Washington Department of Fish and Wildlife), for oil spill sensitivity assessments (Burrard Clean Operations Inc., BC Ministry of Environment and Washington Department of Ecology, NOAA), for marine park siting (Orcas Pass Marine Protected Area Initiative), and planning (Olympic Marine Sanctuary, Pacific Rim National Park, Gwaii Hanaas National Marine Park). Non-governmental organizations have been significant users of the information (see Fig. 6) and the dataset is routinely used by universities in research projects (Dr. T. Klinger, U of W, pers. communication 2002).

3. *Solve* - the proposed ShoreZone project includes highly innovative components for making imagery and ultimately mapping data web-accessible. With support of EVOS, the Cook Inlet Regional Citizens Advisory Council (CIRCAC), the US Fish and Wildlife (USFW) and the National Park Service (NPS), approximately 7,000 km of shoreline imagery has recently been posted on an ArcIMS web site, allowing web-users to “fly” much of the Gulf of Alaska shoreline during the lowest tides of the year. The Washington ShoreZone mapping project (Washington Department of Natural Resources) produced hundreds of CD-ROMs of the ShoreZone data that were freely distributed. CORI has consistently examined means of making the ShoreZone dataset widely accessible.

The Kodiak ShoreZone project will complement the GEM project in the following ways:

Innovative Information Transfer: The existing and proposed ShoreZone mapping project incorporates a highly innovative procedure for displaying all shoreline imagery collected on a publicly-accessible web site. One-second video captures are incorporated onto an ArcIMS web site to allow any web user to literally "fly" the shoreline. This may represent the first use of the ArcIMS mapping technology as part of the GEM project. It is anticipated that the entire mapping dataset will be web-accessible through an ArcIMS, allowing users to generate distribution maps without the need of a GIS. The web-accessible imagery and data products represent an extremely useful tool for oil spill response.

Modeling Applications: The Kodiak ShoreZone dataset will provide uniform biophysical data throughout the 5,000 km of shoreline of the Kodiak archipelago and complement the existing 7,000 km within the GEM project area. The data provide a rationale for extrapolating site-monitoring data beyond the actual monitoring site.

Cross-Habitat Linkages: The proposed ShoreZone dataset includes mapping of resources in *estuaries* and, as such, provides direct linkage between *nearshore* resources and *watershed* resources. In addition, the ShoreZone data set will provide site-specific information on intertidal epibenthos, which is partly related to water quality characteristics of the *Alaskan Coastal Current*. It is expected that large-scale spatial variations in this epibenthos will be strongly related to variation within the *Alaska Coastal Current* ecosystem.

II. PROJECT DESIGN

A. Objectives

Specific objectives of the proposed Kodiak ShoreZone project are:

1. Continue to collect high resolution, low-tide imagery of the remainder of the Kodiak archipelago coastline and make this imagery publicly accessible.

2. Map shoreline features using the Alaska ShoreZone Protocol and making this data publicly accessible through data repositories and ideally through web-accessible (e.g., ArcIMS) sites.

3. Collect intertidal and shallow subtidal species data at selected sites, as per the Alaska ShoreZone Protocol, to verify aerial videographic interpretation, and compile a regional species database.

4. Work with the EVOSTC and other organizations to build a multi-agency/organization database that incorporates the data collected to date.

B. Procedural Methods

B.1 Low-Tide, High Resolution Aerial Video Imagery Collection

Fig 2. Aerial video image capture, south coast of Nuka Is, Kenai Peninsula. Ground survey station KP25 was conducted at this site.

Aerial video imagery (AVI) has been collected along approximately 5,000 km of GEM shoreline, partially funded by a variety of Alaska agencies (Table 1). This oblique, color imagery (Fig. 2) is collected during the lowest daylight tides of the year, while tides are below "zero feet". The imagery includes a continuous geomorphological description of the shore zone on one sound track and a continuous biological description of the shore zone on the other sound track. A three-chip video camera is used for imaging, GPS location is burned onto each frame (Fig. 2), GPS trackline data is electronically recorded and all imagery is recorded on digital tapes. Helicopters are used as the primary flying platform on most surveys but fixed-wing aircraft can be used on "straight" coastlines (e.g., western Cook Inlet).

Standard data products from the AVI surveys are: (a) a flightline manual documenting the flightline tracks and the electronic data files, (b) videotape copies and (c) web-posted 1 second image captures that allow web-users to fly the coastline through an ArcIMS site.

The coastline length by region is summarized in Table 2 and indicates there is about 23,000 km of shoreline within the GEM region. Approximately 7,000 km or 30% has already been imaged to the Alaska ShoreZone Standard (40% has been imaged if only the Katmai NP portion of the Alaska Peninsula is included in that region). Assuming that the Prince William Sound and Kodiak Island coasts are the highest priority, there are 12,500 km remaining to be imaged. With about 1,800 km of imagery acquired during a typical 6-day, low tide window, two AVI surveys would be required to complete Kodiak. There are typically three to four "good" low-tide windows during the summer, allowing up to 5,400 to 7,200 km of shoreline to be imaged per year.

Table 2 Shoreline Length per Region

Region	Shoreline Length (km)	Completed AVI Surveys (km)	% Completed
Cook Inlet, Upper	625	625	100%
Cook Inlet, Lower	1,614	1,614	100%
Kenai Peninsula	1,969	1,969	100%
Kodiak Is	5,006	1,700	34%
PWS, East	3,287	0	0%
PWS, West	4,266	0	0%
Katmai/Alaska Peninsula	6,320	1,000	16%
Totals:	***23,089***	***6,908***	***30%***

A suggested AVI survey schedule for Kodiak is included in Table 3. We have the flexibility to run more or fewer surveys per summer depending on EVOS priorities but have suggested a schedule that will allow completion of the Kodiak in 2004.

Table 3 Suggested Kodiak AVI Survey Schedule

Calendar Period	Suggested AVI Priorities	Coastline Imaged (km)	Cost per Survey
Early June 2005 tide-window	north and east Kodiak	1,800	$ 66k
Early July 2005 tide-window	south and west Kodiak	1,800	$ 66k
	Total:	***3,600***	***$ 132k***

AVI Collection Task Deliverables

- a web-based flight coverage map and database
- videotapes (can be order via web)
- web-posted 1 sec images, web-accessible through an ArcIMS website.

B.3 Shore-Zone Mapping

The primary data product of the proposed ShoreZone mapping project is a georeferenced database of biophysical shore-zone data. The shoreline is segmented into *alongshore units* or segments and into *across-shore components* (Fig. 3). A database contains attributes on each unit and component (Tables 3 & 4); units may be either polygons, lines or points and are referenced through GIS. The shoreline features will be classified by geomorphologists and by biologists according to the Alaska ShoreZone Mapping Protocol (Harper and Morris 2003).

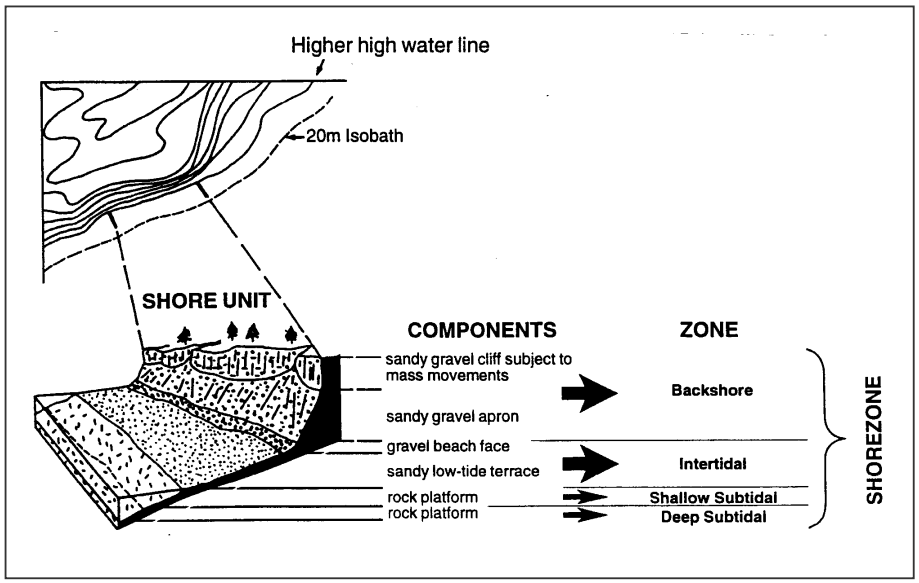

Figure 3. Schematic of the subdivision of the shoreline in *alongshore units* and *across-shore components*.

The ShoreZone mapping products are tied to individual AVI surveys for costing purposes. That is, each 6-day AVI survey is assumed to result in approximately 1,800 km of imagery for

mapping. The cost associated with the biophysical mapping is estimated at $ 86,400/survey or a total of $172,800 for the remainder of Kodiak.

ShoreZone Mapping Task Deliverables

- ArcView spatial coverage of units
- Access database of shoreline attributes

Table 3 Summary of Data Attributes Recorded for Each Shore Unit

Category	Attribute	Description
General	Unit ID	unique identifier used to link database to maps
	Type	polygon, line or point features
	Length	alongshore length of unit
	Area	area of polygon
	Source	sources of imagery
	Mapper	name of mapper
	Map Date	date of mapping
	Editor	name of editor
	Edit Date	date of editing
Exposure	Exposure Calculated	exposure class calculated by GIS model (6 classes)
	Exposure Observed	exposure class observed by mapper (6 classes)
	Exposure Biological	exposure class determined by observed biota within unit
	Effective Fetch	fetch window
	maximum fetch length	maximum measured fetch
	max fetch direction	direction of maximum fetch
	orientation	shore normal direction to shoreline orientation
Shore Character	Shore Type	substrate/morphology summary (34 classes)
	Habitat Type	biological summary based on exposure and substrate (10 classes)
Sediment	Abundance	index of sediment (3 classes)
	Source	source of sediment in unit (3 classes)
	Transport Direction	direction of alongshore transport
Shore Modification	Mod1 type	type of primary shore modification
	Mod1 %	% of shore modification in unit
	Mod1 length	length of shore modification
	Mod2 type	type of secondary shore modification
	Mod2 %	% of shore modification in unit
	Mod2 length	length of shore modification
	Mod3 type	type of tertiary shore modification
	Mod3 %	% of shore modification in unit
	Mod3 length	length of shore modification
Other	Riparian %	% of riparian vegetation in unit
	Riparian Length	length of riparian
	Oil Residence Index	derived estimate of potential oil residence based sediment type and exposure

Table 4 Data Attributes Recorded for Each Across-Shore Component within a Shore Unit

Category	Attribute	Description
General	Component ID	unique identifier linked component to a unit
	Zone	the elevation of the component in the shore zone (3 classes)
	Sequence	the sequence of the component in the zone
Geologic	Component Morphology	a descriptor of the morphology (22 classes)
	Component Sediment	a descriptor of the sediment (22 classes)
	Component Width	width of component
	Component Slope	slope of component
	Process	dominant process (5 classes)
Biologic (Biobands)	VER	'Verrucaria'
	PUC	salt-tolerant grasses
	GRA	Grasses
	BAR	upper barnacle
	FUC	'Fucus'
	BLGR	Blue-green
	ULV	'Ulva'
	HAL6	'Halosaccion'
	BMU	blue mussel
	RED6	mixed filamentous & blade reds
	ALA1	Intertidal *Alaria* spp. with *Semibalanus cariosus*
	SBR6	Soft browns
	CHB6	Chocolate browns
	RED7	Bright red zone
	ZOS	'Zostera'
	ALA2	Dragon kelp
	NER	Nereocystis

B.4 Collection of Intertidal Species Data

The Alaska ShoreZone Protocol specifies procedures for field verification of the aerial video imagery interpretations and to provide descriptions of species assemblages associated with the mapped biobands. These procedures were originally developed for the BC and Washington mapping programs (Morris *et al.*, 1995) and have been modified for the Alaska program. To date, Cook Inlet RCAC and the National Park Service have sponsored surveys at approximately 150 intertidal stations on the Katmai, Lower Cook Inlet and Kachemak Bay, and outer Kenai coasts (*e.g.*, Fig. 4). However, there have been no previously surveyed ShoreZone stations in Kodiak and there was not a substantial post-spill monitoring effort in Kodiak; there are few existing field data stations.

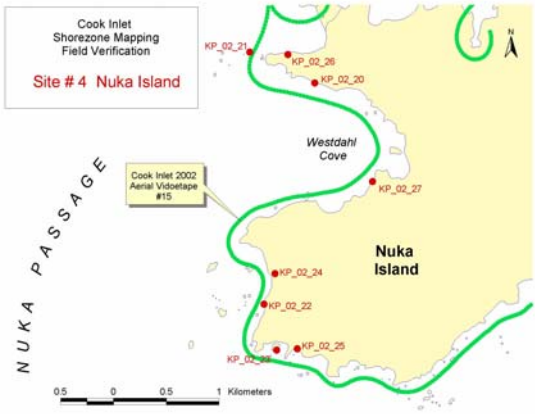

Fig. 4 Aerial video flightline (green) map of outer Nuka Is also showing the location of 2002 ground-survey stations.

Shore stations would be surveyed over a wide geographic range and the data cataloged into a standardized format (*e.g.*, Fig. 5) currently being developed through a contract between Archipelago Marine Research, Ltd. and the Cook Inlet RCAC. Such data provide biologists with

specific species data that can be related to the *biobanding* that is mapped from the imagery. A standard relational database (Fig. 4) would be used for the inventory of station intertidal species. In addition to a formalized data collection procedure, the primary benefit of the field program is that the interpretation of biota from the aerial imagery is substantially improved. Cost of the ground-station field program is $ 60,450.

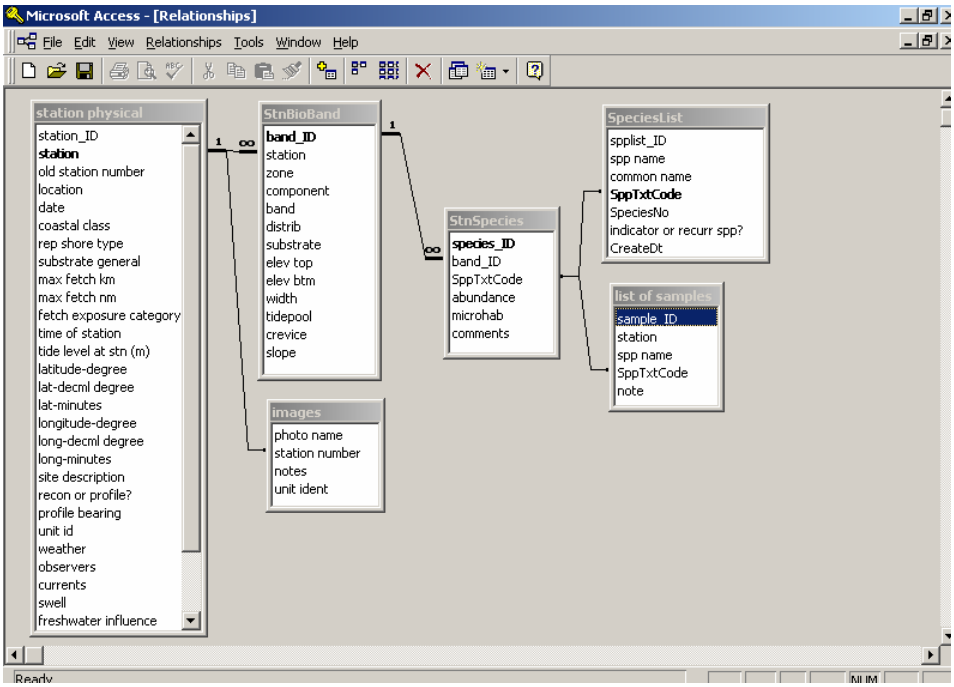

Fig. 5 Schematic of relational database used to catalog ShoreZone ground station data.

C. Statistical Methods

No specialized statistical analysis is required for the proposed ShoreZone Mapping Program.

D. Description of Study Area

The Kodiak survey would encompass unmapped portions of Kodiak Is (Fig. 1) and will complement other mapping programs in the Gulf of Alaska. (Fig. 1) by mapping ~3300 km of shoreline within the Kodiak Island archipelago.

It is assumed that all communities on Kodiak would benefit from the proposed project in that the imagery and ShoreZone data are available directly through web-access. The direct web-access of imagery should benefit lay-users, including tourists and recreational users. The direct, web-access of the ShoreZone data should benefit regional spill responders, resource managers and interest groups.

E. Coordination and Collaboration with Other Efforts

The proposed ShoreZone Mapping Project complements a number of ongoing projects in the region, including existing mapping initiatives by CIRCAC, USFW, the EVOS TC, the NPS, and potential work in Prince William Sound by the Prince William Sound RCAC and others and by NOAA in southeast Alaska. Survey work would be coordinated with any other proposed

ShoreZone projects within the GEM-area by ensuring that the biophysical mapping and database development are coordinated.

The proposed mapping, as well as the existing mapping, are precursors for more detailed mapping/monitoring initiatives that are likely to be part of GEM. It is anticipated that GEM-area nearshore habitat researchers will need access to Shorezone habitat data which this proposal will provide. To date, there is no contiguous dataset using the same methods across the entire GEM area. With the completion of Kodiak and Prince William Sound, however, these data would be available throughout the entire coastline.

The proposed initiative directly complements interests of the National Park Service (NPS) in Lake Clark, Katmai and Kenai Fiords National Parks. We have already been in direct contact with resource managers, planners, or researchers at the Sensitive Areas Work Group (Doug Mutter), at NPS (Alan Bennett and Peter Amatto), at KBNERR (Scott Pegau), and the Kodiak Fisheries Industrial Technology Center (Bob Foy). Additionally, data has been provided to oil industry operators and response organizations in Cook Inlet and Prince William Sound (e.g. for the development of an eelgrass database for areas downstream of Prince William Sound for Alyeska SERVS) as well as the workgroup representing ADEC, industry, citizens, and other agencies who are leading the development of Geographic Response Strategies within the EVOS area.

CIRCAC, USFW and the Kenai Borough already funded all of the mapping for Cook Inlet. Cook Inlet RCAC received funding from the state Coastal Impact Assistance Program (CIAP) for Kodiak ShoreZone mapping based on EVOS-funded imagery. The National Park Service (with some financial and in-kind support by Cook Inlet RCAC), funded a complete ShoreZone survey (imaging, mapping and ground stations) of Katmai National Park. EVOS funded imaging and mapping of the outer Kenai coast to Port Bainbridge on the southwestern corner of Prince William Sound.

Finally, this project, as well as all pre-existing ShoreZone projects sponsored by the Cook Inlet RCAC, will be closely coordinated with any efforts to build a one-source database for the GEM-area (e.g. Couvillion/TNC proposal) as well as future efforts to coordinate data within the entire Alaskan coast.

IV. SCHEDULE

A. Project Milestones

Objective 1	Collect Aerial Video Imagery	
	Kodiak North & West	June 2005
	Kodiak, South & East	July 2005
Objective 2	Ground Survey	June 2005
	Ground Data Summary	Dec 2005
Objective 3	Complete ShoreZone Mapping	
	Kodiak	May 2006

B. Measurable Project Tasks

The proposed project tasks are organized in terms of our "suggested" schedule and assuming that the proposed Kodiak ShoreZone project is fully EVOS funded. There is flexibility with these tasks).

FY 05, 1st quarter (October 1, 2004 - December 31, 2004)

October 2005	Project funding approved by Trustee Council

FY 05, 2nd quarter (January 1, 2005 - March 31, 2005)

Planning for field program, sub-contracts in place for helicopters/boats

FY 05, 3rd quarter (April 1, 2005 - June 30, 2005)

First week in June 2005	AVI Survey, North and West Kodiak
First week in June 2004	Field Verification Survey

FY 05, 4th quarter (July 1, 2005 - September 30, 2005)

First week in July 2005	AVI Survey, South and West Kodiak
01 Sept 2005	AVI flight manuals complete, tape copies
30 Sept 2005	AVI Imagery web-posted

FY 06, 1st quarter (October 1, 2005-December 31 2005)

31 December 2005	Ground-Station database available for review

FY 06, 2nd quarter (January 1, 2006 - March 31, 2006)

January	Annual EVOS Workshop

FY 06, 3rd quarter (April 1, 2006 - June 30, 2006)

15 May 2006	Kodiak ShoreZone Mapping Database Complete

V. RESPONSIVENESS TO KEY TRUSTEE COUNCIL STRATEGIES

A. Community Involvement and Traditional Ecological Knowledge (TEK)

Cook Inlet RCAC-sponsored afternoon workshop and evening-presentation were held in Kodiak in March 2004 during which community members were given a detailed description and demonstration of the ShoreZone mapping database, summary data, and web-based products produced for the Kodiak region to date. There was significant input and interest to continue the mapping program for Kodiak. As well, there were examples of local community experts "reviewing" the data during the presentation to see if it matched up with their local knowledge of the area. For example, a local birding expert had noted large eelgrass beds on exposed areas of Long Island near Kodiak. However, through our mapping program, he learned that eelgrass doesn't grow on those exposed shorelines but the ShoreZone data showed beds of Surf Grass in the exact areas that he was reporting eelgrass. He was very pleased to learn this and felt that Shorezone was providing him with information that he couldn't find anywhere else. We will continue to provide workshops and presentations within this community and work with local organizations (*e.g.* local schools) and governments (*e.g.* the Kodiak Island Borough) to ensure that the data can be used by local people.

Through their Public Outreach Program and Director of Public Outreach, the Cook Inlet RCAC will continue to provide opportunities to bring ShoreZone presentations and workshops to other communities in the area. By continuing to work with community members from Kodiak, the data that will be accessible via the web can be reviewed and citizens can provide QA/QC data and other information.

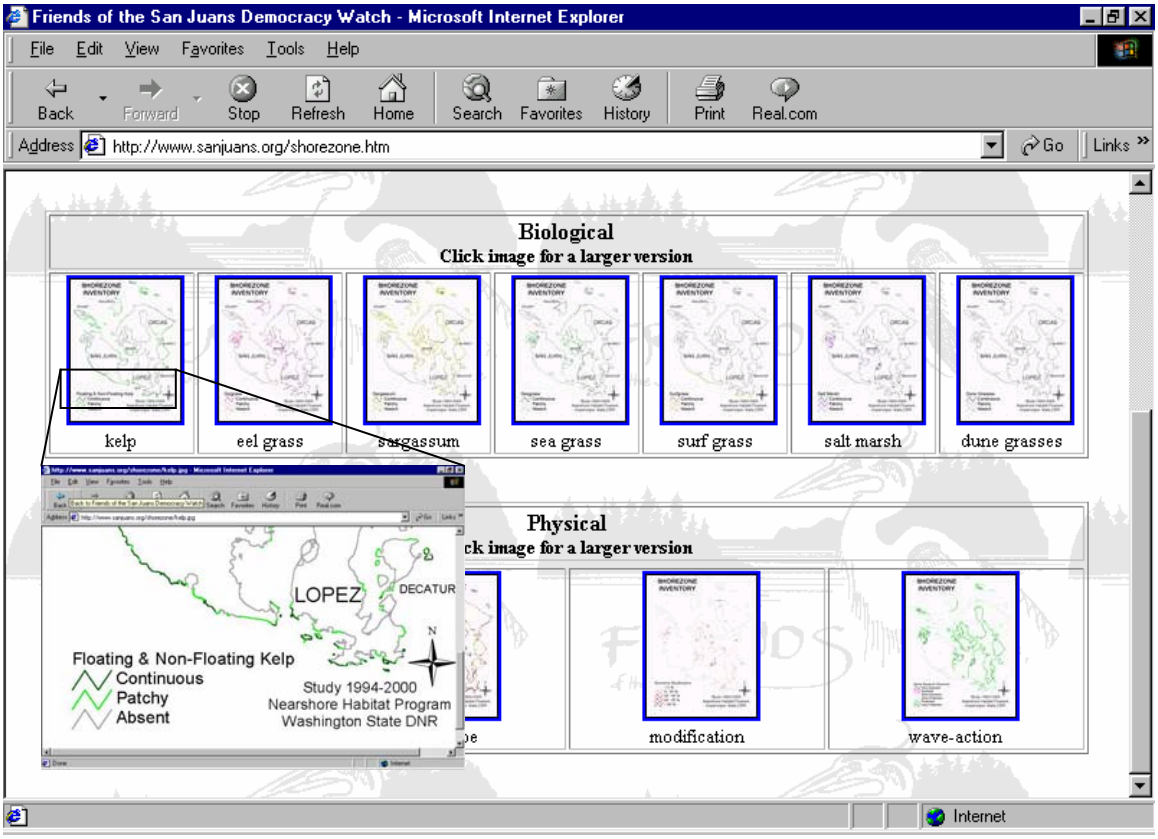

Figure 6 Example of the Washington ShoreZone data adapted by the Friends of the San Juan's for their web site (http://www.sanjuans.org/shorezone.htm). Inset (lower left) shows blow-up of the kelp distribution map

In the Washington ShoreZone project, community groups have welcomed the systematic, state-wide dataset and have groomed the ShoreZone data for use in their own areas of interest (Fig. 6).

B. Resource Management Applications

The ShoreZone mapping data has a range of potential resource management applications; actual known uses of the ShoreZone data in Washington and BC are summarized (inset at right) which would apply to Alaska as well.

Resource Management Applications
mapping of critical habitat (eelgrass)
oil spill sensitivity mapping
oil spill response
GRS site planning
Essential fish habitat mapping
sandlance spawning capability
bird habitat management
recreational planning
riparian vegetation disturbance
shore-zone modification (seawalls)
marine protected area planning
archaeological site potential

VI. PUBLICATIONS AND REPORTS

We anticipate publishing a peer-reviewed paper

summarizing coastal resource distribution in the Gulf of Alaska. The two most appropriate journals appear to be:

1. Coastal Management Journal

2. Journal of Ocean and Coastal Zone Management (publication in preparation)

VII. PROFESSIONAL CONFERENCES

We anticipate presenting preliminary results at least one scientific conference, preferably one that focuses on the Pacific Northwest. Potential candidates are:

- International Conference on Remote Sensing for Marine and Coastal Environments
- Pacific Estuarine Research Society Conference

VIII. PERSONNEL

A. Principal Investigator (PI)

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B. Other Key Personnel

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Sidney, BC V8L 5Y8 Canada
phone: 250 655 4035
fax: 250 655 1290
email: john@coastalandoceans.com

C. Contracts

This proposal is submitted under the NOAA BAA. The primary subcontractor will be Coastal & Ocean Resources Inc. with additional subcontracting for biological mapping components to Archipelago Marine Research Ltd.

IX. LITERATURE CITED

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Jon Issacs and Associates 1985. Kodiak Island Borough Coastal Sensitivity Study Technical and Citizens Manuals. Kodiak Island Borough, Community development Department, Kodiak, Alaska

Morris, M., J.R. Harper , P.D. Reimer, H.R. Frith and D.E. Howes 1995. Coastal biotic mapping system using aerial video imagery. *In* Proceedings of the Third Thematic Conference on Remote Sensing for Marine and Coastal Environments, Seattle WA, p. 200-210.

NOAA 2000. Environmental Sensitivity Maps for Prince William Sound, Alaska. National Oceanic and Atmospheric Administration, Hazardous Materials and Response Branch, Sand Point, Washington.

Ruby, C.H., M.O. Hayes, P.J. Reinhat and K. Finkelstein 1979. Oil spill vulnerability, coastal morphology and sedimentation of the Kodiak archipelago. Contract Report by the University of South Carolina, Columbia, S.C. 149p.

Schoch, G.C., J.R. Harper and M. Dethier 1998. The physical classification and biological modeling of nearshore habitats in Carr Inlet. Technical Report for the Washington State Department of Natural Resources, Olympia, WA, 70p.

WaDNR 2001. Washington State ShoreZone Inventory. Technical Data Report Distributed on CD-ROM by the Washington State Department of Natural Resources, Olympia, Washington (http://www2.wadnr.gov/nearshore/data/).

Zacharias, M.A., D.E. Howes, J.R. Harper and P. Wainwright 1998. The British Columbia Marine Ecosystem Classification: Rationale, development and verification. Coastal Management 26:105-124.

COASTAL AND OCEAN RESOURCES INC.

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JOHN R. HARPER
P. Geo.

SPECIALTIES:

- **coastal and nearshore processes**
- **multidisciplinary marine studies**
- **coastal zone management**
- **oilspill research and planning**

EDUCATION:

B.Sc.	Geology (cum laude), University of Massachusetts (1973); L.R. Wilson Award for Excellence in Geology
M.Sc.	Marine Science, Louisiana State University (1976)
Ph.D.	Marine Science, Louisiana State University (1978)

WORK EXPERIENCE:

1987-present	**Principal**, Coastal and Ocean Resources (previously Harper Environmental Services), British Columbia and Nova Scotia
1989-present	**Adjunct Professor**, Centre of Earth and Ocean Resources, University of Victoria, Victoria, British Columbia
1987-1989	**Marine Geologist/Coastal Coordinator**, Committee for Co-ordination of Joint Prospecting for Mineral Resources in South Pacific Offshore Areas (CCOP/SOPAC), Suva, Fiji
1986-1987	**Manager**, Maritime Region, Dobrocky Seatech Ltd., Halifax, Nova Scotia
1985-1986	**Manager**, West Coast Region, Dobrocky Seatech Ltd., Sidney, BC
1983-1985	**Manager**, Geosciences and Hydrographic Services, Dobrocky Seatech Ltd.
1980-1983	**Senior Project Scientist**, Woodward-Clyde Consultants, Victoria, British Columbia and San Francisco, California
1978-1980	**Post-Doctoral Fellow**, Geological Survey of Canada, Pacific Geoscience Centre., Sidney, British Columbia
1973-1978	**Research Assistant**, Coastal Studies Institute, Louisiana State University, Baton Rouge, Louisiana

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GEOGRAPHIC EXPERIENCE:

East, west and arctic coasts of Canada; east, west and arctic coasts of the United States; Brazil; Costa Rica; Fiji; Kenya; Kiribati; Papua New Guinea; Tonga; Western Samoa.

Over the past 15 years, Dr. Harper has personally managed over 250 separate projects related to coastal and marine resources including the following disciplines:

Coastal Zone Management - Dr. Harper has been closely involved with coastal management planning in British Columbia and is currently conducting a resource inventory and user needs assessment for the province of British Columbia. He is also involved with the development of marine region classification of Canada for use in environmental ecosystem monitoring. Dr. Harper has been closely involved with the development of coastal habitat classification and mapping systems over the past three years, using state-of-the-art remote sensing and GIS systems.

Oil Spill Research, Planning and Response - oil spill research studies since 1980, including several years of field studies associated with the Baffin Island Oil Spill experiment, sensitivity evaluations for the coasts of northern California, British Columbia, Kodiak Island, the Chukchi and Beaufort Sea coasts of Alaska, the Beaufort Sea coast of Canada, Labrador and Newfoundland. Other research areas have included the long-term fate of oil on shorelines, decision-making for shoreline cleanup operations and long-term monitoring programs. In 1984, he designed and implemented a physical monitoring program of the MV Puerto Rican oil spill off San Francisco. In 1991, Harper Environmental Services compiled the first Directory of Canadian Marine Oilspill Specialists. In 1992, he directed an Oil Spill Sensitivity Mapping Workshop in Costa Rica for ARPEL. Dr. Harper has been extensively involved in the EXXON Valdez oil spill cleanup operation in Prince William Sound (1989-1992) with participation in quality assurance for preparation of oiling maps, coordination of the Prince William Sound Fate and Persistence Studies, bioremediation monitoring surveys.

Coastal Research/Marine Geology - coastal and nearshore studies since 1971 and with research projects on all major coastlines of North America and throughout the South Pacific. Research topics have included: beach monitoring, coastal mapping, sediment transport predictions and measurements, coastal erosion and scour monitoring, and coastal storm surge surveys.

Environmental Impact - since 1973, Dr. Harper has been closely involved with large, multidisciplinary impact assessments including: the first superport to be developed in the US (Harper, 1974), major construction projects at Prudhoe Bay (causeway construction and oil field waterflood construction), siting and impact evaluation of a major marine oil terminal in Santa Barbara, and the Beaufort Sea Environmental Monitoring Project (BEMP). Also he has been extensively involved with oil spill contingency planning in the marine environment with input to plans for offshore drilling in western Canada (Chevron, PetroCanada), the Beaufort Sea (Dome Petroleum) and Prudhoe Bay, Alaska (ARCO).

Coastal and Ocean Resources Inc. (CORI). 2002. 2002 Aerial Video Imaging Survey, Outer Kenai, Alaska (24-28 June 2002). Contract Reprot by Coastal and Ocean Resrouces Inc. of Sidney, British Columbia to the Exxon Valdez Oil Spill Trustee Council, Anchorage, Alaska.

Coastal and Ocean Resources In.c, (CORI). 2002. 2002 Field Verification Survey of Shorelines in Cook Inelt and the Outer Kenai Peninsula. Contract Report by Coastal and Ocean Resrouces Inc. of Sidney, British Columbia to the Cook Inlet Regional Citizens Advisory Council, Kenai, Alaska.

Harper, J.R. and P.D. Reimer 1995. Review of aerial video survey techniques and recommendations of survey standards. Technical Report by Coastal and Ocean Resources Inc., Sidney, BC for the Ministry of Agriculture, Fisheries and Food, Victoria, BC, 32 p. w appendices

Harper, J.R., D.F. Dickins, D. Howes and G. Sergy, 1992. Recent shoreline mapping projects in British Columbia and significance to oil spill countermeasure planning. Proceedings of the 15th Arctic and Marine Oil Spill Technical Seminar (AMOP), Environment Canada, p. 293-300.

Susan M. Saupe

910 Highland Ave., Kenai, AK 99611 home: (907) 260-2144
saupe@circac.org work: (907) 283-7222

Education:

M.S. Chemical Oceanography, Univ. of Alaska, Fairbanks, May 1990
B.S. Chemistry, Univ. of Alaska, Fairbanks, May 1985
University of Oregon, Eugene, 9/80-6/81.

Professional Experience:

2001-present	**Lead Scientist,** Alaska Environmental Monitoring and Assessment Program (EMAP), ADEC, Anchorage, AK
1996-present	**Director of Science and Research**, Cook Inlet Regional Citizens Advisory Council, Kenai, AK
1990-1996	**Crew Leader/Data Analysis Supervisor**, Institute of Marine Science, Univ. of Alaska, Fairbanks, AK
1988-1991	**Research Assistant**, The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA
1985-1988	**Graduate Research Assistant**, School of Fisheries and Ocean Science, Univ. of Alaska, Fairbanks, AK
1984-1985	**Laboratory Technician**, Inst. of Northern Engineering/Water Research Center, Univ. of Alaska, Fairbanks, AK
1982-1984	**Teaching Assistant**, Chemistry Dept., Univ. of Alaska, Fairbanks, AK

Field Experience:

6/02-8/02	**Chief Scientist,** Alaska EMAP, Gulf of Alaska
5/02; 6/01	**Shoreline Ecologist/Project Manager,** ShoreZone Mapping Project, Cook Inlet and Kenai Peninsula Coastline
9/00	**Project Manager,** Intertidal Reconnaissance Surveys, central Cook Inlet, AK
6/99	**Invited Scientist**, Collaborated with NOAA Hazmat Scientists for Intertidal Studies, Kasitsna Bay, Alaska.
6/99	**Project Manager**, Acoustic Doppler Current Profile Study conducted by University of Alaska Fairbanks, Cook Inlet, Alaska.
6/98	**Invited Scientist,** Collaborated with NOAA Hazmat Scientists for Intertidal Studies, Prince William Sound, Alaska.
3/94-9/96	**Chief Scientist,** Intertidal Studies, Kachemak Bay, Alaska (4 months).
6/96-7/96	**Scientific Diver**, Nearshore Vertebrate Predators. R/V *Bering Explorer*
6/90-9/95	**Chief Scientist**, Intertidal Damage Assessment and Restoration Studies, Prince William Sound and Ke Peninsula, R/Vs *Bering Explorer*, *Pacific Star*, *Sea Haven*, and *Acania* (17 mos.).
3/92-4/92	**Contractor** to University of Texas, Under-Ice Photosynthesis Studies in Boulder Patch, Endicott Island, Alaska.
8/88-3/91	**Research Assistant**, Estuarine Modeling Study, Cape Ann and Cape Cod, MA (2 mos.).
8/88	**Contractor** to Kinnetic Laboratories, Pulp mill effluent effects on primary production. R/V *Curlew*.
4/88-5/88	**Graduate Student**, Bering Sea marginal ice zone study. R/V *Alpha Helix.*
9/87	**Graduate Student**, Stable isotope food web study, Chukchi Sea. R/V *Surveyor*.
8/87	**Graduate Student**, Nitrate uptake experiments, Northern Bering and Chukchi Seas. R/V *T.G. Thomson*
2/87-3/87	**Contractor** to LGL Alaska, Water and zooplankton collections, Aleutian Islands. R/V *Miller Freeman*
10/86	**Graduate Student**, Zooplankton collections, Beaufort Sea. USCGC *Polar Star*.
9/86	**Graduate Student**, Stable isotope Study, Chukchi Sea. R/V *Oceanographer*.
9/84-8/85	**Graduate Student**, Carbon Energetics Study, Southeastern Bering Sea (4 mos.) R/V *Miller Freeman*.

Project Management:

2001-present	**Alaska Environmental and Monitoring Program,** Alaska Dept. of Environmental Conservation
2001-present	**ShoreZone Mapping,** Contracts with Coastal and Ocean Resources
2000-2002	**Intertidal Reconnaissance Surveys,** Contract with Littoral Ecological and Ecosystem Services, Inc.
2000	**Tide-Rip Study in Cook Inlet**, Contract with Dr. Mark Johnson, University of Alaska Fairbanks
1996-1998	**P450 Reporter Gene System Assays,** Contract with Jack Anderson, Columbia Analytical Inc.

1996-1997 **Cook Inlet Shelikof Strait Project,** Contract with Kinnetic Laboratories Incorporated
1997-1998 **Kenai River Estuary Sediment Characterization Study,** Contract with Kinnetic Laboratories, Inc.
1997-1998 **Cook Inlet Sediment Toxicity Study**, Contract with Kinnetic Laboratories, Inc.
1994-1998 **Kachemak Bay Intertidal Recruitment and Succession Study,** Contract through CMI

Additional Experience and Education:

- Shoreline Countermeasures Assessment Team Training, April 1999
- Adjunct Faculty, Kenai Peninsula Community College, Jan 98-May 2000
- Commercial Longline and Set-net Salmon Fisherman in Kodiak, 1984, 1992
- NAUI Openwater II SCUBA Certification (Dry-Suit Trained)
- Chart Navigation, Massachusetts Maritime Academy
- Outboard Engine Repair Classes (Mass. Maritime and Fairbanks Community Schools)
- Welding Technology (SMAW, Tanana Valley Community College)

Misc. Steering and Planning Committees

- Alaska Non-Indigenous Species Working Group, Representative for CIRCAC
- Oil Spill Recovery Institute, At-large member of Advisory Board
- Habitat Committee, EVOS Trustee GEM Program
- Alaska Water Quality Program Rebuild Working Group, Alaska Department of Environmental Conservation
- ARRT, Science and Technology Work Group, Representative for CIRCAC
- Kachemak Bay National Estuarine Research Reserve, Research Committee
- Environmental Monitoring Committee and Prevention, Response, Operations, and Safety Committee, Cook Inlet RCAC

Misc. Publications/Presentations related to Proposal

Harper, J.R. and S. M. Saupe. 2002. Intertidal Biophysical Mapping of Kachemak Bay and Cook Inlet Using Low-Tide Oblique Aerial Video Imaging. Proceedings Kachemak Bay Conference, Homer, AK.

Saupe, S.M. 2002. Shoreline Inventory Mapping System. EVOS Trustee Council Workshop Detecting and Understanding Change in Nearshore Environments: Planning for Habitat Mapping in the Gulf of Alaska, Homer, AK.

Saupe, S.M.2003. Mapping Coastal Habitats in Southcentral Alaska using the ShoreZone Technique. Quarterly newsletter of Alaska Chapter of the American Fisheries Society, Vol. 23 No.2., Juneau, AK.

Harper, J., H. Berry, and S. Saupe. 2003. A Summary of the ShoreZone Mapping System. Proceedings of the Northeastern Pacific Marine Habitat Classification Workshop, 27 May 2003, CA.

EXXON VALDEZ OILSPILL TRUSTEE COUNCIL
DETAILED BUDGET FORM FY 05 - FY 07

Budget Category:	Proposed FY 05	Proposed FY 06	Proposed FY 07		TOTAL PROPOSED
Personnel	$3.8	$0.0	$0.0		$3.8
Travel	$2.4	$0.0	$0.0		$2.4
Contractual	$164.0	$176.4	$0.0		$340.4
Commodities	$5.7	$0.0	$0.0		$5.7
Equipment	$0.0	$0.0	$0.0		$0.0
Subtotal	$175.9	$176.4	$0.0		$352.3
Indirect (rate will vary by proposer)	$8.8	$8.8	$0.0		$17.6
Project Total	$184.7	$185.2	$0.0		$369.9
Trustee Agency GA (9% of Project Total)	$16.6	$16.7	$0.0		$33.3
Total Cost	$201.3	$201.9	$0.0		$403.2

Cost-share Funds:

Cook Inlet RCAC is waiving a portion of their overhead rate as a match towards this project and is proposing only 5% indirect costs. I

Cook Inlet RCAC is providing their scientific staff as project manager as match equaling ~3.8K in salary. Her proposed personnel costs for participating in the AVI and on-the-ground sruveys are shown below.

Cook Inlet RCAC, through their proposal to the Coastal Impact Assistance Program, has provided 40K to date for biophysical mapping in Kodiak which will be a portion of the entire Kodiak Island ShoreZone database. In addition, they provided an initial community outreach visit in March 2004 to present ShoreZone data summaries and discuss future coastal mapping needs in the area. The total for hosting this workshop was ~5K for personnel services, travel, reception fees, etc...Cook Inlet RCAC will again donate reception fees, advertising, costs, and the services of their Director of Public Outreach to host a similar workshop in 2006 equalling ~5K in value.

Dr. Bob Foy of FITC, University of Alaska Fairbanks will provide small boat use for on-the-ground surveys in areas close to the town of Kodiak and will provide his time and a graduate student for additional surveys throughout the Kodiak Island archipelago during his nearshore fish surveys which will provide an additional value of data exceeding 20K.

Finally, Cook Inlet RCAC has worked with numerous other funding sources and partnering organizations to develop web-based access tools and public outreach summaries of ShoreZone work to date. The total value of these development projects and data from adjacent areas of the Gulf of Alaska are valued at over 500K. This proposal will benefit from these investements and will begin to close-up the data gaps for ShoreZone in Alaska. The work that has been done for database development and web-access tools significantly reduces the potential costs for this project if it were done from scratch without leveraging these other programs (some of which has been funded by EVOSTC).

FY 05-07

Date Prepared:

Project Number: 050764
Project Title: ShoreZone Mapping for Kodiak Island
Proposer: Susan M. Saupe, Cook Inlet RCAC

FORM 4A NON-TRUSTEE SUMMARY

EXXON VALDEZ OILSPILL TRUSTEE COUNCIL
DETAILED BUDGET FORM FY 05 - FY 07

Personnel Costs:			Months	Monthly		Personnel
Name	Description		Budgeted	Costs	Overtime	Sum
Saupe	AVI/Field Surveys		0.5	7.5		3.8
		Subtotal	0.5	7.5	0.0	
					Personnel Total	$3.8

Travel Costs:		Ticket	Round	Total	Daily	Travel
Description		Price	Trips	Days	Per Diem	Sum
Saupe	Kenai/Kodiak R/T	0.4	2	8	0.2	2.4
					Travel Total	$2.4

FY 05

Project Number: 050764
Project Title: ShoreZone Mapping for Kodiak Island
Proposer: Susan M. Saupe, Cook Inlet RCAC

FORM 4B
Personnel & Travel DETAIL

EXXON VALDEZ OILSPILL TRUSTEE COUNCIL
DETAILED BUDGET FORM FY 05 - FY 07

Contractual Costs:								Contract
Contract to Coastal and Ocean Resources, Inc.								Sum
Personnel				days		rate		
J.	Harper	AVI Surveys (x2, 6 day surveys)/planning/mob/demob.			22	0.66		14.5
N.	Borekcy	AVI Surveys (x2, 6 day surveys)/planning/mob/demob.			20	0.38		7.6
M.	Morris	AVI Surveys (x2, 6 day surveys)/planning/mob/demob.			20	0.45		9.0
J.	Harper	Field Survey (planning/reporting)			6	0.66		4.0
M.	Morris	Field Survey (planning/mob/demob/reporting)			16	0.45		7.2
	Tech x1	Field Survey (planning/mob/demob/survey/reporting)			15	0.38		5.7
Travel			Ticket Price	Round Trips		Total Days	Per Diem	
J.	Harper	AVI Surveys (x2, 6 day surveys)	1.3	2		16	0.2	5.8
N.	Borekcy	AVI Surveys (x2, 6 day surveys)	1.3	2		16	0.2	5.8
M.	Morris	AVI Surveys (x2, 6 day surveys)	1.3	2		16	0.2	5.8
	Pilot	AVI Surveys (x2, 6 day surveys)	0.0	0		14	0.2	2.8
	Tech x1	Field Survey	1.3	1		4	0.1	1.7
				Unit		Rate		
Equipment rental (AVI equipment and cameras)					12.0	0.13		1.6
Equipment rental (field survey cameras and laptop)					6.0	0.10		0.6
Phone/Courier					4	0.05		0.2
Web-posting of Imagery (ArcIMShosting fees, etc...)					2	0.10		0.2
Digitizing of coastline support					1	2.00		2.0
Other contracts				Unit		Rate		
Vessel Charter					9	1.70		15.3
Helocpter Charter (surveys)					12	4.00		48.0
Helocpter Charter (fuel positioning)					2	2.50		5.0
	phycologist	Field Survey (field survye/taxonomy/reporting)			16	0.65		10.4
	faunalist	Field Survey (field survye/taxonomy/reporting)			12	0.65		7.8
S.	phycologist	Field Survey	1.3	1		2	0.1	1.5
							Contractual Total	$164.0

Commodities Costs:			Commodity
Description			Sum
videotapes & copies	12	0.15	1.8
film	2	1.4	2.8
Miscellaneous field supplies	1	0.9	0.9
Charts	1	0.2	0.2
		Commodities Total	$5.7

FY 05

Project Number: 050764
Project Title: ShoreZone Mapping for Kodiak Island
Proposer: Susan M. Saupe, Cook Inlet RCAC

FORM 4B
Contractual & Commodities DETAIL

EXXON VALDEZ OILSPILL TRUSTEE COUNCIL
DETAILED BUDGET FORM FY 05 - FY 07

New Equipment Purchases:	Number	Unit	Equipment
Description	of Units	Price	Sum
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
		New Equipment Total:	$0.0

Existing Equipment Usage:	Number	Inventory
Description	of Units	Agency

FY 05

Project Number: 050764
Project Title: ShoreZone Mapping for Kodiak Island
Proposer: Susan M. Saupe, Cook Inlet RCAC

FORM 4B
Equipment
DETAIL

EXXON VALDEZ OILSPILL TRUSTEE COUNCIL
DETAILED BUDGET FORM FY 05 - FY 07

Personnel Costs:			Months	Monthly		Personnel
Name	Description		Budgeted	Costs	Overtime	Sum
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
		Subtotal	0.0	0.0	0.0	
					Personnel Total	$0.0

Travel Costs:	Ticket	Round	Total	Daily	Travel
Description	Price	Trips	Days	Per Diem	Sum
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
				Travel Total	$0.0

FY 06

Project Number: 050764
Project Title: ShoreZone Mapping for Kodiak Island
Proposer: Susan M. Saupe, Cook Inlet RCAC

FORM 4B
Personnel
& Travel
DETAIL

EXXON VALDEZ OILSPILL TRUSTEE COUNCIL
DETAILED BUDGET FORM FY 05 - FY 07

Contractual Costs:						Contract Sum
Description						
Contract to Coastal and Ocean Resources, Inc.	Unit (km)	Rate (per km)				
Personnel costs for biphysical mapping	3600	0.048				172.8
J. Harper EVOS Meeting	1.3	1	5	0.1		1.8
M. Morris EVOS Meeting	1.3	1	5	0.1		1.8
If a component of the project will be performed under contract, the 4A and 4B forms are required.					**Contractual Total**	$176.4

Commodities Costs:	Commodity Sum
Description	
Commodities Total	$0.0

FY 06

Project Number: 050764
Project Title: ShoreZone Mapping for Kodiak Island
Proposer: Susan M. Saupe, Cook Inlet RCAC

FORM 4B
Contractual & Commodities
DETAIL

EXXON VALDEZ OILSPILL TRUSTEE COUNCIL
DETAILED BUDGET FORM FY 05 - FY 07

New Equipment Purchases:	Number of Units	Unit Price	Equipment Sum
Description			
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
		New Equipment Total	$0.0

Existing Equipment Usage:	Number of Units	Inventory Agency
Description		

FY 06

Project Number: 050764
Project Title: ShoreZone Mapping for Kodiak Island
Proposer: Susan M. Saupe, Cook Inlet RCAC

FORM 4B
Equipment
DETAIL

EXXON VALDEZ OILSPILL TRUSTEE COUNCIL
DETAILED BUDGET FORM FY 05 - FY 07

Personnel Costs:			Months	Monthly		Personnel
Name	Description		Budgeted	Costs	Overtime	Sum
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
		Subtotal	0.0	0.0	0.0	
					Personnel Total	$0.0

Travel Costs:		Ticket	Round	Total	Daily	Travel
Description		Price	Trips	Days	Per Diem	Sum
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
					Travel Total	$0.0

FY 07

Project Number: 050764
Project Title: ShoreZone Mapping for Kodiak Island
Proposer: Susan M. Saupe, Cook Inlet RCAC

FORM 4B
Personnel
& Travel
DETAIL

EXXON VALDEZ OILSPILL TRUSTEE COUNCIL
DETAILED BUDGET FORM FY 05 - FY 07

Contractual Costs:	Contract Sum
Description	
Contractual Total	$0.0

Commodities Costs:	Commodity Sum
Description	
Commodities Total	$0.0

FY 07

Project Number: 050764
Project Title: ShoreZone Mapping for Kodiak Island
Proposer: Susan M. Saupe, Cook Inlet RCAC

FORM 4B
Contractual & Commodities
DETAIL

EXXON VALDEZ OILSPILL TRUSTEE COUNCIL
DETAILED BUDGET FORM FY 05 - FY 07

New Equipment Purchases:	Number	Unit	Equipment
Description	of Units	Price	Sum
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
		New Equipment Total	$0.0

Existing Equipment Usage:	Number	Inventory
Description	of Units	Agency

FY 07

Project Number:
Project Title:
Proposer:

FORM 4B
Equipment
DETAIL

Budget Justification

ShoreZone Mapping for Kodiak Island

FY05 (184.7K + trustee agency GA 1.6.K = 201.3K)
(total requested for FY05/FY06 = 369K + trustee agency GA 33.3K = 403.2K)

Personnel:
Susan M. Saupe, Director of Science and Research at Cook Inlet RCAC, will be the Project Manager for this proposal to oversee the field survey scheduling and develop agreements for the various survey teams. She will also participate in the aerial and on-the-ground surveys as a coastal ecologist. Her salary + benefits requested from EVOSTC for FY05 (October 1-September 30) for this project are 3.8K for 0.5 months. An additional 3.8K salary match is provided by Cook Inlet RCAC.

All other personnel on this project will be participating as sub-contractors to Cook Inlet RCAC and are shown in the "Contractual Costs" part of our submitted detailed budget.

Request: **(3.8K)**

Travel:
Travel is requested for Susan Saupe's travel from Kenai to Kodiak for two field surveys. The costs include a R/T ticket from Kenai/Kodiak, and per diem for 8 days. Cook Inlet RCAC will provide travel match for her travel to the annual EVOS Marine Sciences meeting.

Request: **(2.4K)**

Contractual:
The bulk of this proposal is for contractual costs. These are:
Coastal and Ocean Resources, Inc. – to conduct ShoreZone Aerial Surveys, on-the-ground surveys, and biophysical mapping. This includes personnel costs, travel, equipment rental, phone/courier, and services such as the web-posting of the digital imagery and the digitizing of appropriate coastlines for the GIS database. Coastal and Ocean Resources, Inc. (CORI) was selected for this subcontract as they are currently the only group conducting coastal mapping using the Alaska ShoreZone Mapping Protocols as developed under an earlier EVOS TC contract to CORI:
Total Personnel costs to CORI include:

John Harper,	28 days @ $660 per day =	18.5K
Neal Borecky,	20 days @ $380 per day =	7.6K
Mary Morris,	36 days @ $450 per day =	16.2K
Technician	15 days @ $380 per day =	5.7K

Dr. Harper will be providing planning, gear preparation, geomorphology services during 2 six-day AVI surveys, biophysical mapping, and reporting). Neal Borecky will be providing planning, mob/demob of field gear, navigational and GIS services during two six-day AVI surveys, Marry Morris will be providing planning, mob/demob of field gear, nearshore biology services during one six-day AVI survey and one six-day field survey, and reporting for both the

AVI survey data and the on-the-ground survey data. The field technician position will provide services during the on-the-ground surveys as well as planning, mob/demob, and reporting.

Travel to CORI:
John Harper, Mary Morris, and Neal Borecky will each travel R/T from Victoria, Canada to Kodiak for two separate surveys. The technician will travel for one field survey. The costs for each R/T tick are estimated at 1.3K each. Per diem is for two days of travel for each survey and six days of surveys during each AVI survey and two days of travel and two days in Kodiak for the field surveys. Travel costs are included for the pilot to include per diem while living in Kodiak during the two AVI surveys.

Other services to CORI
CORI will also be contracted to provide equipment during the field and AVI surveys totaling 2.2K (12 days of AVI equipment and cameras @ 0.13K per day; 6 days of field survey cameras and laptop at 0.1K per day). Phone/courier costs are estimated at 0.2K. CORI will have costs associated with posting all of the digital video collected during the AVI surveys to a web site. These costs are estimated at 0.1K per suvey totaling 0.2K for the project. Finally, 2K is included for services associated with digitizing appropriate coastlines for the development of the coastal GIS biophysical database.

Other Contracts
Phycologist – This contract will be for a phycologist to provide taxonomic expertise during the field surveys, preparation of pressed algal vouchers, and taxonomic summaries. At this time, we hope to be able to contract with Dr. Sandra Lindstrom for these services and are estimating a total of 16 days @ $650 per day. Travel is estimated at 1.5K for one roundtrip ticket from Canada to Kodiak at 1.3K and two days of travel per diem.

Faunalist – this contract will be for an intertidal invertebrate specialist to provide taxonomic expertise during the field surveys, preparation of digital voucher photos, and taxonomic summaries. At this time, we hope to contract with either Dennis Lees or Allan Fukuyama for these services and are estimating a total of 12 days @ $650 per day.

Requested: **(164K)**

Commodities:
Commodities include the purchase and production of videotapes from the AVI surveys and costs are estimated at 0.15K per set of tapes for 12 sets totaling 1.8K. Film for the 35 mm camera document photos are estimated at 1.4K per survey for two AVI surveys totaling 2.8K. Miscellaneous field supplies such as herbarium paper, survey tapes, data sheets, etc…are estimated at 0.9K for one field survey. Charts will be purchased for the survey area for use during the AVI and field surveys and are estimated at 0.2K.

Request: **(5.7K)**

Equipment:
No funds for equipment purchases are requested.

Indirect:

Cook Inlet RCAC is charging overhead at a rate of 5% to cover administrative support costs.

Request: **(8.8K for CIRCAC and 16.6K for Trustee Agency GA = 25.4K)**

FY 2006 - $185.2 + GA = $201.9
Personnel:
None

Travel:
None

Contractual:
A contract to Coastal and Ocean Resources, Inc. (CORI) will include 172.8K for the biophysical mapping of all of the shorelines surveyed during the two AVI surveys. “Biophysical mapping” includes converting the digital image and audio data into georeferenced data and producing a database that links the geomorphology and biological habitat data for the ShoreZone areas. This work will be completed by geomorphology mappers at CORI and coastal ecologists at Archipelago Marine Research, Ltd.

Commodities:
None

Equipment:
None

Indirect:
Cook Inlet RCAC is charging overhead at a rate of 5% to cover administrative support costs.

Request: **(8.8K for CIRCAC and 16.7K for Trustee Agency GA = 25.5K)**