

# alaska update » WINTER 2008



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## Estuaries Are ‘Nurseries of the Sea’

### Where freshwater drainages meet the saltwater of the sea, estuaries offer an ecological bridge.

Their shallow, less saline waters are sheltered from oceanic extremes, allowing for myriad forms of aquatic life on earth.

In Southeast Alaska, the watery web of islands and estuarine channels lying between the depths of the North Pacific and the rainforest’s tumbling salmon streams are an especially important link. Here, kelp grows like an undersea forest and beds of eelgrass offer a nursery for the young of species such as salmon and rockfish. The forage fish that feed these great natural systems—Pacific herring and eulachon, capelin and sandlance—depend on beds of eelgrass for safe harbor during early stages in their development.

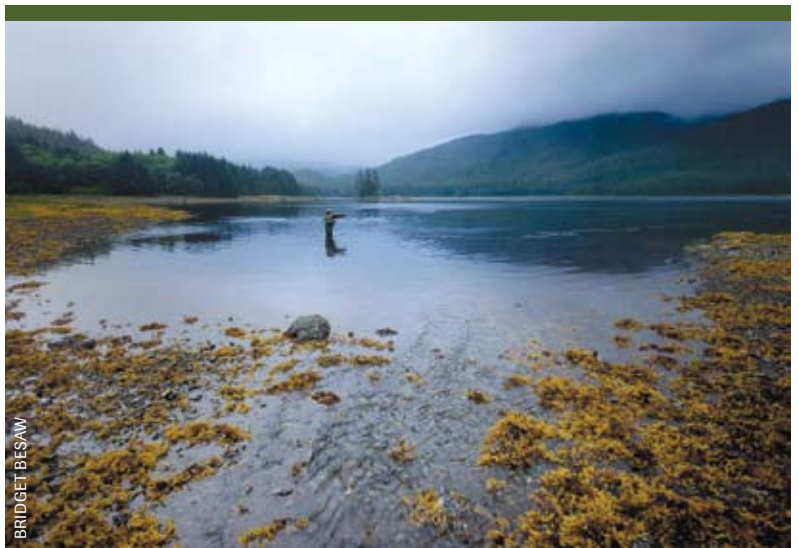
These estuarine waters harbor eagles, sea otters, bears, whales, sea lions, and thousands of birds—all attractions for the region’s growing tourism economy. The entire estuarine complex of Alaska’s Alexander Archipelago measures about 12,000 square miles of water area and includes 1,000 islands, with 21,000 miles of shoreline. It’s an estuarine complex without comparison. No other estuaries of the United States can compare: Puget Sound, for one, is less than a tenth its size.

Southeast estuaries remain healthy and relatively little development has occurred, yet threats still exist. The risk of oil spills and development along its shorelines—dredge and fill, upland development, and point and nonpoint sources of pollution—are looming pressures for these rich menageries of life.

The scientific community still has a lot to learn about estuaries. Though we’ve completed detailed GIS inventories of rainforests and now know where the most valuable old-growth lies, we don’t understand estuaries in the same way.

The Conservancy’s estuary program is changing this. In 2004, the Conservancy helped launch the ShoreZone inventory program in Southeast, which employs a suite of high-tech tools to better understand the connection between Southeast uplands and its estuaries. One result is that the Conservancy and its partners are creating maps documenting the biodiversity of estuaries and nearshore habitats in Southeast for the first time.

“There’s never really been a good inventory of what habitats are out there. And to understand important needs of subsistence and commercial fisheries, we need to know where kelp, eelgrass and other species live and grow. The ShoreZone habitat mapping being done by the Conservancy and partners can tell us this in great detail,” says coastal and marine ecologist Dr. K Koski. “We can’t prioritize habitats until we know what we have. Once we understand where the most ecologically important areas are, we can help ensure they are protected.”



### The Conservancy’s estuarine conservation program is supported by these partners:

- » Skaggs Foundation
- » Edwards Mother Earth Foundation
- » The Gordon and Betty Moore Foundation
- » Ocean Fund, Royal Caribbean Cruise Line
- » The Alaska Department of Natural Resources, Division of Coastal and Ocean Management
- » Mineral Management Services Community Impact Assistance Program

give the gift  
of a lifetime

Sal Creek, a Harris River tributary  
on Prince of Wales Island

## Restoring a River

**Along a Harris River tributary**, at points where old landslides filled the streambed, Jim O'Brien maneuvered a giant excavator into place and began to dig as delicately as possible. When he found the buried cobbles, O'Brien knew he'd found the lost river. By uncovering it, the local contractor invited the river back to its native course.

The Harris is a relatively healthy river. It drains a 19,000-acre basin of lush rainforest on Prince of Wales Island, where the land is steep and rugged. More than 100 inches of annual precipitation spill over the rain gauge, continually recharging its fast-flowing tributaries. Cutthroat and steelhead, coho and chum lurk in its eddies.

Yet the river's mixed history left its mark. In places, logging road culverts blocked a salmon's safe passage. There were landslides. The natural variety of its tangled banks was gone. The cluttered woody debris that gives structure to the river, providing habitat for fish, had disappeared—management practices of past decades cleared even in the sensitive streamside corridor. Despite its past, the watershed ranks high in the Conservancy's list of Core Areas of Biological Value.

"The Harris River and its tributaries offer us the best chance of restoring an entire watershed successfully. The streams in this watershed still offer good habitat, but we're taking them from good to excellent, helping to create a natural world-class fishery once again," says Rob Bosworth, who directs Southeast Alaska programs for the Conservancy.

The results are visible. Some roads are now gone, others are reduced to single-track hiking trails, and a dozen culverts have been pulled out for good. Where the river had no natural impediments to churn up essential eddies, crews dropped in boulders, bulky root wads and stout cedar logs. Young salmon have appeared where for years there were none.

"This creates the deep pools that allow a fish to winter over. It's an important component of a healthy river," Bosworth says.

So today, the same tools that once built the logging roads in the Tongass National Forest are undoing the work of the past. It's a step toward a restoration economy: one that helps rebuild nature's infrastructure, creates jobs you can raise a family on, and restores the fish that feed people and nature.

The Harris River restoration project began in 2006, following the results of the Conservancy's Coastal Forests and Mountains Conservation Assessment. Working in partnership with the U.S. Forest Service, the Conservancy's stream restoration continues in 2009.

**Read the assessment at [nature.org/alaska](http://nature.org/alaska).**



KIM HEACOX/ACCENTUALASKA.COM

**There is no legacy more lasting than nature itself.**

That's why The Nature Conservancy works with people like you to preserve the lands and waters that you love close to your home and around the world.

Our mission of preserving biological diversity guides everything we do. By partnering with villages, communities, businesses and government, we're conserving Alaska's wild salmon. We're restoring seabird habitat in the Bering Sea. Our ecoregional assessments are helping to identify important areas for protection in Alaska's Arctic. In Alaska, we're achieving lasting results in ways that endure.

Contact **Connie Wolfe at 907-276-3133, ext. 109** or **[cwolfe@tnc.org](mailto:cwolfe@tnc.org)** today to learn more about leaving your legacy.



## donor profile

### Sam Skaggs

**On meticulously detailed computer spreadsheets coded in a rainbow of colors,** Sam Skaggs watches for the subtle trends that spell the difference between buy and sell. By day, he's an investment advisor.

Sam is also president of the Skaggs Foundation, a small family foundation based in Juneau that helped the Conservancy initiate its estuaries program in Southeast Alaska. In this, Sam says, the colors of a GIS-map are as revealing.

"To me, GIS is like the Excel spreadsheet of conservation science," Sam says.

On a conservation map, habitats such as kelp forests and eelgrass beds each have colors of their own.

"Those two ecosystems are like the old growth of the sea. Southeast estuaries are the major rearing grounds for fish. We've got to know where they are and we have to know about their ecological connection to upland forests. We don't want to inadvertently damage either one by not knowing how important it was," Sam says.

Since the very beginning in 1988, Sam has played a leadership role in the Conservancy in Alaska. He served on the first board of trustees and he continues to serve on the Conservancy's advisory board. Recently, Sam challenged others to invest in coastal conservation with a \$100,000 match opportunity.

"It's been a great investment. I'm pleased with the work to date," he says. "My commitment has been to find real solutions to conservation problems. We can develop our natural resources, but we need to realize that wilderness *is* our real natural resource."



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