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Water Quality Trading: The Forestry Connection

Associate Forest Service Chief Sally Collins
Second National Water Quality Trading Conference
Pittsburgh, PA—May 23, 2006

I would like to begin by thanking Bruce Knight and Carl Lucero for inviting me here today. It is a pleasure to be here; actually, it is very exciting for me, because delivering clean water is one of the oldest and highest missions of the Forest Service.

Traditionally, we have delivered water as a public good from national forest land. Until recently, we didn't think much about the role markets might play, but water quality trading has the potential to take our mission to a whole new level. It's part of a new and growing interest in markets for ecosystem services, not just in the United States, but globally. Whether it's water quality

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or carbon sequestration, the emerging markets for a broad array of ecosystem services hold a lot of promise to become an economic engine that drives conservation like never before.

I want to share some of our collective thinking on this and tell you about what we're doing to restore the nation's forests and improve water quality.

- I'll begin by telling you how the Forest Service is involved in protecting water quality.
- Then I'll talk about why we've become so interested in the market dimension—in water quality trading and other markets for ecosystem services.
- Finally, I'll talk about the role we can play in protecting water quality on both public and private land.

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Forest Service Mission

First, a little about the Forest Service. We manage 193 million acres of national forest land—an area almost twice the size of California—spread across 43 states and Puerto Rico. For the last hundred years, although we didn't think of it in quite these terms, we have delivered ecosystem services from these lands, including high-quality water. In fact, conserving waterflows was inscribed into our original mission by a law called the Organic Act. That was way back in 1897.

And that made a lot of sense. Most national forest land is at higher elevations, comprising the headwaters of many of our most important river systems, like the Columbia, Missouri, or Ohio. These lands deliver a lot of water, so it's in the national

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interest to protect them. The national forests and grasslands contribute clean drinking water to over 3,000 communities, including such major cities as Portland, Denver, and even Pittsburgh. More than 60 million Americans rely on their national forests and grasslands for their drinking water.

But our mission actually goes well beyond the national forests and grasslands. The Forest Service is charged with sustaining the health, diversity, and productivity of the *nation's* forests.

That includes not just national forest land, but all 749 million acres of forested lands in this country—private, state, tribal, and federal.

And that also makes sense, because public/private distinctions are ecologically meaningless. Ecosystems don't recognize

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borders and boundaries, nor do threats from water pollution, wildfires, or invasive species. If we want to deliver high-quality water to our communities, then we have to manage for sustainable forest ecosystems across entire landscapes. Through our State and Private Forestry branch, our research organization, and our international programs, the Forest Service protects values that Americans need and want from *all* of their forests.

So, in addition to delivering high-quality water from *public* land, we are also responsible for helping landowners manage their forests sustainably so *they* can deliver high-quality water from *private* land. In fact, almost half of the nation's forests are owned and managed by family forest landowners. We've traditionally helped these folks through various kinds of

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technical and financial assistance. Unfortunately, it hasn't been enough.

Loss of Open Space

And that brings me to the market dimension. Today, many family-owned forestry and ranching operations are in trouble. The problem is that markets for America's forest and rangeland products have softened at the same time that markets for urban land development have boomed and the demand for second homes has exploded. Largely as a result, numerous private landowners are getting out of the timber business. With real estate markets booming, the future of privately owned forests is highly uncertain.

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It is no surprise that developers are frenetically snapping up land, but the statistics are alarming. During the 1980s, the average loss of working farms and ranches to development nationwide was more than 3,000 acres per day; during the 1990s, the average loss rose to more than 5,000 acres per day. Forested lands are threatened, too. In the next 25 years, we estimate that more than 44 million acres of private forests in the lower 48 states will be at risk of development. That is an area about the size of Pennsylvania and West Virginia combined.

When a private forest or ranch is sold for development, the loss of ecosystem services is direct, immediate, and permanent. Even a meager forestry or ranching operation provides more ecosystem services—including more high-quality water—than

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your average subdivision. And the loss is growing; time is not on our side.

At the Forest Service, we have come to believe that markets for ecosystem services offer grounds for hope. If we can find ways for downstream water users to pay upstream landowners to keep their lands forested ... and ways for forest landowners to trade in carbon or in critical wildlife habitat ... *and* ways for them to charge fees for hunting, fishing, and camping ... then these payments, combined with income from traditional forest, range, or farm products, just might tip the balance in favor of conserving ecosystem services for future generations.

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Forest Service Role

The question is, what role can the Forest Service play to help make this happen?

Thanks in part to new perspectives introduced by the Millennium Assessment, the Forest Service has taken a fresh look at the natural world. We now see forests and trees as part of a natural infrastructure requiring investments, just as we—as a society—invest in infrastructure like roads and dams. We need these investments on both public and private land to sustain the whole array of services that ecosystems provide.

On national forest land, we are investing in ecological restoration—in restoring the ability of ecosystems to deliver clean water and other services that Americans want and need.

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On private land, we look to market-based approaches such as water quality trading to help mobilize the needed investments.

Water quality trading is predicated on two things: clean water and a market.

With respect to clean water, the Forest Service is uniquely positioned to contribute. As forest and rangeland managers, we specialize in knowing how land management practices affect water quality. We study different forest and rangeland conditions to know how water filtration works. We also house the largest forestry research and development organization in the world, and through partnerships with universities and other federal and state agencies, we are learning more about this every day. We hope to continue to be a part of this learning and so

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contribute to the dialogue needed to improve water quality nationwide.

With respect to markets, they are not something one might expect the Forest Service to delve into. Nevertheless, we are exploring what it takes to establish sound markets for ecosystem services, partly because we need to know how federal actions—including our own—affect private markets for ecosystem services. We know that:

- markets require uniformity or consistency in the products for sale;
- robust markets require keen attention to transaction costs, especially those inadvertently or unnecessarily imposed;

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- markets require opportunities for price discovery and transaction oversight;
 - markets require aggregators who bundle services, particularly where landownership patterns are highly fragmented; and
 - markets require strong accountability and monitoring of the product—the clean water the land might generate.

At the Forest Service today, we are working hard to understand all this—frankly, with respect not only to water quality, but also to biodiversity, carbon, wetlands, and other markets that are emerging around us. Let me share with you a few things we are doing:

- We are developing an ecosystem services footprint for our organization to measure how our activities affect water

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quality, water quantity, and other types of ecosystem services.

It's a first step toward reducing our own ecological

footprint—to put our money where our mouth is, so to speak.

- We are also working with NRCS and EPA to host a series of seminars in Washington, DC, to inform policymakers—and ourselves—on water quality trading and other types of environmental credit trading. Markets for ecosystem services raise all kinds of complicated questions ... like defining the terms needed for a sound trading scheme ... like what happens when the land is sold ... like what to do about existing statutes and regulations that might discourage credit trading. If we want credit trading to work, we have to do things right. We need partnership forums for sharing

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information and promoting a constructive dialogue about what is possible and realistic.

- Together with NRCS, we have joined the Katoomba Group, and we are cosponsoring this year's Katoomba Conference in Portland, Oregon. Katoomba is one of the most important forums internationally for discussing credit trading. It is an international working group representing forestry and energy industries, research institutions, the financial world, and environmental NGOs, and its goal is to advance markets for ecosystem services from forests.
- As part of the Katoomba Group, we cosponsor a Bloomberg-like website that tracks carbon and other ecosystem markets and posts feature articles and important resources on a daily basis. It's called The Ecosystem Marketplace.

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- We are also forming a network of partners interested in promoting cross-jurisdictional approaches to delivering ecosystem services on a watershed scale. We continue to strive to learn all we can about ecosystem services and to identify what the role of federal forests and rangelands might be.

The Importance of Water

In closing, it is difficult to understate the importance of water in this country, particularly as our population grows. We believe that water quality trading will help us meet one of the most vital and pressing challenges to conservation in the 21st century. I salute you for being here, and I look forward to discussing how we can work together to meet the challenge.