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The Economic Impacts of Oregon's South Coast Restoration Industry

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Acronyms

ARRA	American Recovery and Reinvestment Act of 2009
BLM	Bureau of Land Management
BOR	Bureau of Reclamation
CRP	Conservation Reserve Program
CSP	Conservation Stewardship Program
CWA	Coquille Watershed Association
DEQ	Oregon Department of Environmental Quality
EPA	Environmental Protection Agency
EQIP	Environmental Quality Improvement Program
FIP	Forestry Incentive Program
FSA	Farm Service Agency
FSC	Forest Stewardship Council
GRP	Grassland Reserve Program
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
ODA	Oregon Department of Agriculture
ODFW	Oregon Department of Fish and Wildlife
OWEB	Oregon Watershed Enhancement Board
OWRI	Oregon Watershed Restoration Inventory
PCSRF	Pacific Coastal Salmon Recovery Fund
RRSNF	Rogue River–Siskiyou National Forest
SWCD	Soil and Water Conservation District
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
WHIP	Wildlife Habitat Incentive Program

Executive summary

Forest and watershed restoration work is closely tied to the history and identity of Oregon's South Coast, which has long relied on its woods and waters for forestry, fishing, agriculture, and sustenance. Declines in these industries and the vitality of South Coast landscapes have prompted new forms of stewardship to restore ecological structure and function, and create resilient local economies. Although this work has helped produce diverse environmental benefits, its economic impacts have been less well understood. Illuminating these economic impacts can help draw increased investments to regions like the South Coast and magnify the benefits of restoration for rural workers, businesses, and communities. With this in mind, we documented trends in restoration funding and types of work on the South Coast from 2001 to 2010; the role of restoration in supporting local businesses; the challenges that these businesses face; and the economic and employment impacts of restoration. From this, we developed recommendations for supporting and expanding the local restoration industry.

Trends in restoration investments

From 2001 to 2010, restoration investments on the South Coast totaled at least $57.6 million. This includes federal contracts, grants, and agreements; Oregon Watershed Enhancement Board (OWEB) grants; and private landowner investments. These investments have supported a diversity of restoration planning and activities, including extensive road construction and maintenance projects as well as fish and wildlife projects to restore in-stream and upland ecosystems.

Seventy-five percent or $43 million of the restoration funding on the South Coast has come from federal agencies, particularly the U.S. Forest Service. These agencies typically contract opportunities to perform restoration work to the private sector. Forty-one percent of federal contracts offered on the South Coast were for maintenance work, and 36 percent were for natural resources and conservation activities.

When local businesses capture federal contract opportunities on the South Coast, they can help bring home the economic benefits of restoration. South Coast contractors have captured $5.3 million or 24 percent of this federal work. Eighty-eight percent of this local capture was road construction and maintenance contracts. Yet nonlocal contractors have captured $9 million in road construction and maintenance, which indicates that federal agencies are offering more restoration work suited to local capacity than South Coast contractors are currently capturing.

Funding from OWEB has provided at least $4.4 million to restoration work on the South Coast. Of further importance, OWEB funding supports watershed councils and nonprofits to help implement restoration work on private, federal, and other lands. In addition to federal and state funding, restoration investments from assorted sources such as private industrial forestland owners have provided at least an additional $9.9 million. OWEB dollars and other sources have primarily supported in-stream and riparian work.

The future stability of these funding sources is uncertain. Federal spending relies on policy and appropriations decisions, and may be vulnerable to fluctuations. Although the South Coast witnessed a 253 percent increase in federal restoration investments from 2008 to 2009 as a result of the American Recovery and Reinvestment Act, this funding was short term and has since declined. With the recent passage of Measure 76, an Oregon state ballot initiative that has rededicated a portion of state lottery funds for watershed restoration, OWEB funding will likely be one of the most stable sources of restoration funding on the South Coast.

Local restoration capacity

Sources of restoration capacity on the South Coast include a number of local organizations such as watershed councils, the Coquille Indian Tribe, and the contractors and workers who implement these projects. These entities play different roles in fostering the local restoration industry and producing economic benefits.

The South Coast Watershed Council, Lower Rogue Watershed Council, and Coquille Watershed Association (CWA) help plan restoration projects and connect contractors, or in the case of the CWA, a nonprofit in-house crew, with work opportunities. They also hire and build the skills of several local employees in their offices. The Coquille Tribe coordinates restoration activities in the entire Coquille watershed as well as on its tribal forestlands. This creates opportunities for their tribal crew to conduct this work, and for local businesses to access more watershed and forest restoration jobs.

We identified forty local contractors who have engaged in restoration work in the last ten years. Many of these contractors began their businesses through road construction and maintenance or other heavy equipment– or logging-related work, and continue to perform a mixture of nonrestoration and restoration projects. Restoration has allowed them to diversify their businesses and keep their employees and subcontractors working when they may be otherwise unemployed. It has also enabled many contractors to invest in new skills and equipment.

Twenty-one of these contractors have captured federal restoration contracts and twenty-three have worked on projects with watershed councils. While there is a robust local contractor base to perform heavy equipment–related work on roads and streams, local capacity to conduct more technical work around stream engineering and erosion control is limited. As restoration work increasingly involves more technically complex projects, South Coast contractors will need to develop this capacity to remain competitive.

The biggest challenge to contractors who seek local restoration work is a lack of consistent opportunities. Many contractors still rely on other nonrestoration work, travel long distances to find work, or both. Although smaller contracts may increase access to and distribute the work among several contractors, the high costs of mobilizing equipment to job sites make projects of scale more feasible for some contractors. Another major barrier is the lack of a coherent way for local contractors to find about local federal contract opportunities.

The economic and employment benefits of restoration

Restoration investments have benefited the South Coast's economy in several ways. From 2001 to 2010, they have supported an average of seventy-three local jobs per year, which is one of every 300 nonfarm jobs in Curry and Coos counties. In a more populous county such as Multnomah, a similar proportion would equal more than 1,300 jobs. Forty-three of these jobs were directly related to employment in restoration, while the remaining thirty were due to indirect and induced impacts such as supply purchases and worker spending in the local economy. Restoration investments have also resulted in more than $32 million in economic output on the South Coast. Additional economic

benefits from restoration on the South Coast include improved roads and infrastructure, increased productivity of forest and agricultural lands, avoided costs from degraded forest and waters, and healthy sport and sustenance fisheries.

Fostering a resilient restoration industry for the future

Key stakeholders and leaders on the South Coast may wish to expand the local economic impacts of restoration by forming a network of restoration practitioners and funders with a shared interest in the restoration industry. Partners in this network could collaborate to assess capacity and needs, develop an action plan with defined goals, and implement and monitor the outcomes of this plan. Based on the findings of this report, we suggest that this plan might include strategies for the following:

1. Increasing and broadening the possible benefits of restoration work by
   a. Maintaining a steady supply of NEPA-ready projects
   b. Innovating new project designs using stewardship and best-value contracting
   c. Coordinating between the Forest Service's restoration priorities under the new watershed condition framework and the existing work of watershed councils
   d. Supporting the development of environmental markets
2. Diversifying core restoration funding streams to access value-added markets and private foundation resources
3. Raising the visibility of the restoration industry to the public and to decision-makers, and quantifying the environmental gains of restoration
4. Seeking larger-scale projects that unite a range of partners to tap into their diverse capacities
5. Creating a system to help local contractors more consistently access opportunities to perform federal, state, and other restoration projects
6. Monitoring and publicizing the economic impacts of restoration work on the South Coast with of job creation, local capture, and job quality, and using results to track progress toward action-plan goals

Introduction

Oregon's South Coast is a place where water, fish, and forests have always mattered. Communities in the area grew and prospered through timber, agriculture, and fishing. Although these industries remain important to the identity and economy of the South Coast, their viability has declined as a result of shifts in markets, technologies, policies, and social agreement around natural resource management. However, these shifts have also produced new opportunities to steward South Coast lands and waters. The Northwest Forest Plan and programs to support displaced natural resource workers have emphasized ecosystem management approaches to remedy the impacts of extraction and create high-quality local jobs. The State of Oregon also began to prioritize watershed restoration in the 1990s through the Watershed Health Program and, later, the Oregon Plan for Salmon and Watersheds. The state's investments have helped a network of watershed councils, other conservation organizations, and businesses grow around restoration work.

Restoration work can create multiple benefits for Oregon's communities. These include jobs and increased economic activity;[1] capacity-building opportunities for contractors, workers, and other organizations; and forest and watershed productivity. This report profiles the current restoration industry of the South Coast and suggests ways to magnify its impacts on local businesses and communities (see Appendix A for details on research approach). It provides the following:

- Historical and current context of the South Coast's working lands and waters
- Trends in restoration investments on public, private, and tribal lands with federal, state, tribal government resources from 2001 to 2010
- Analysis of the strengths and gaps in local restoration capacity
- Profiles of local restoration organizations and contractors
- Estimated job creation and economic impacts of restoration
- Recommendations for augmenting and expanding existing restoration capacity, and potential methods and measures for documenting the economic impacts of restoration

The South Coast context

We define the South Coast as the following watersheds in Curry and southern Coos counties (Figure 1): New River, Floras Creek, Sixes River, Elk River, Euchre Creek, Lower Rogue River, Hunter Creek, Pistol River, Chetco River, Winchuck River, and the Coquille River (North Fork, East Fork, Middle Fork, and South Fork). These watersheds contain forested headwaters and riparian areas, freshwater wetlands, and tidal marshes and estuaries. All of these rivers have supported wild salmon and steelhead, and Curry County is home to two separate evolutionary significant units of Coho salmon.

Communities built on working lands and waters

Prior to Euro-American settlement in the 1850s, the ancestral homelands of the Coquille Tribe covered more than a million acres from lower Coos Bay south to Port Orford.[2] Permanent settlements were scattered along the coast and the lower reaches of streams and rivers, creating easy access to abundant stocks of fish and game. Seasonal camps were located in important hunting and gathering areas in upland and interior valleys.

Today's South Coast communities have a long history of working on the land and capitalizing on the area's rich natural resources beginning with homesteaders in the 1800s. When European settlers began to arrive in this area, they brought both cattle and sheep and established a robust agricultural economy.[3] In Curry County alone, more than 400 dairies existed at the turn of the twentieth century.[4]

Timber harvesting also became a major component of the South Coast's economy after Euro-American settlement and the area became known for its "unique and unsurpassed qualities of the Coos and Curry Port Orford cedar" that produced a variety of value-added products.[5] In the early 1900s, significant portions of forestland on the South Coast became part of the Siskiyou National Forest. In Curry County, as many as seventy-five mills existed in the early part of the twentieth century.[6] Following World War II, domestic housing demand drove increased timber harvest, and in the late 1980s, more than 160 million board feet of timber was harvested annually in Curry County alone.[7] Although timber harvest on the national forest has declined considerably since the late 1980s, significant private timber harvest continues.[8]

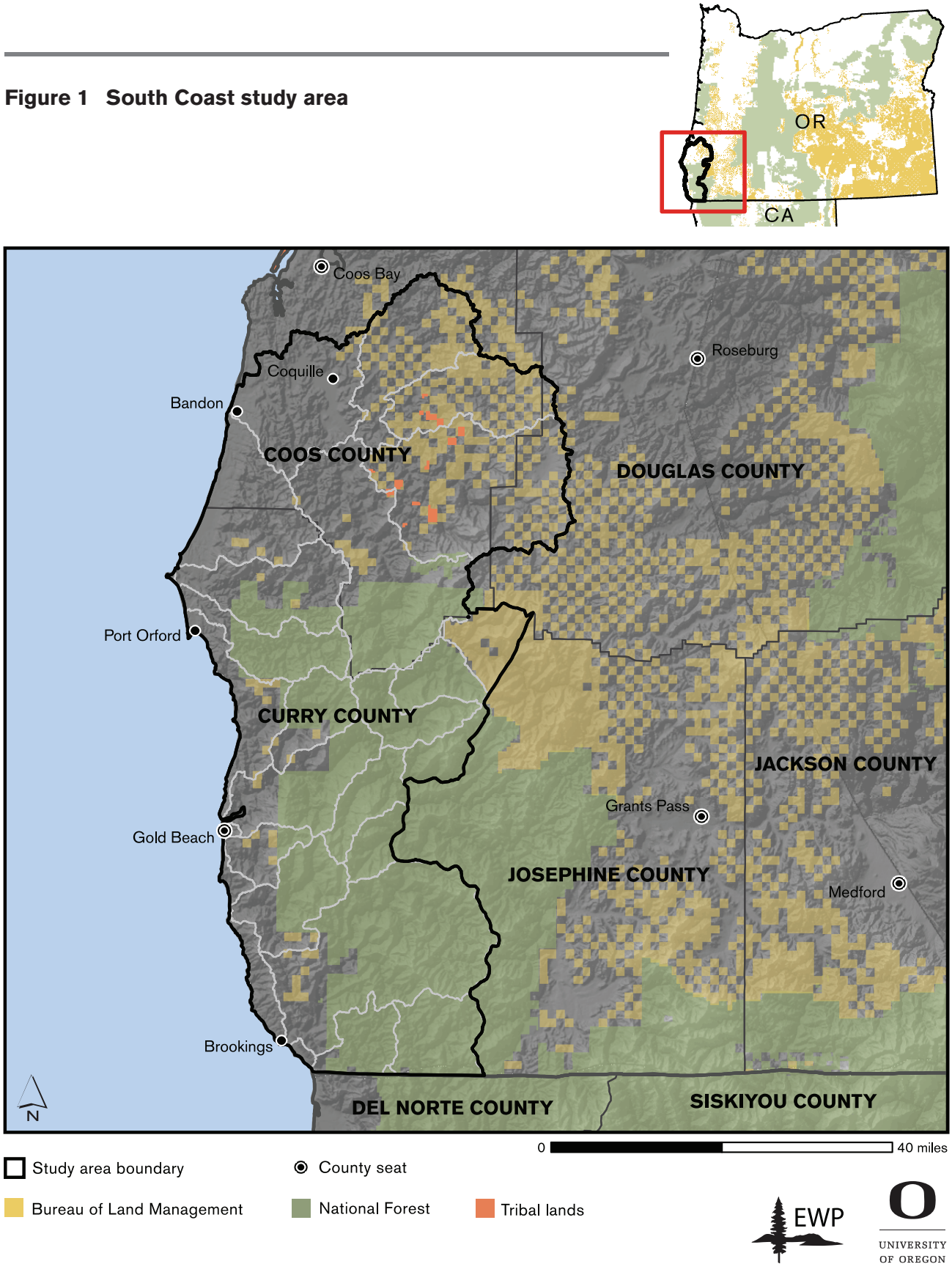
In addition, fishing has always been an important part of the South Coast economy. Commercial harvesting of salmon began in the late 1800s with the development of canneries along the Coquille and Rogue Rivers. Although salmon runs had declined so extensively by the early 1900s that many of these canneries shut down,[9] commercial ocean fishing fleets have operated steadily out of Bandon, Port Orford, Gold Beach, and Brookings.

Another development that affected the South Coast landscape was the discovery of gold in Curry County in the mid- and late 1800s. This led to a mining boom and the hydraulic mining of several rivers. Although some commercial mining claims remained active as recent as the 1990s, today mining is mostly recreational.[10]

The South Coast's current economy

Over time, employment in natural resource sectors of the South Coast has declined. For example, natural resources employment (forestry, fishing, and agricultural support jobs) in Curry County fell from 186 total jobs in 2000 to ninety-two in 2010 (less than two percent of the county total). In 2010, the value of the total catch of commercially harvested fish from the South Coast's four ports had dropped to $8.5 million, down from close to $14 million in 2004.[11] However, the utilization of natural resources remains significant to South Coast communities. For example, the Coquille Tribe owns more than 8,000 acres of forest, farm, residential, and commercial-retail properties. Of this, about 5,000 acres are actively managed forestland and they have a twelve-acre commercial cranberry farm.[12] Although federal timber harvest is a fraction of what it was in the late 1980s, the average private industrial timber harvest between 2001 and 2010 in Curry County was close to 70 million board feet per year (compared to the average federal timber harvest of a little more than 8 million board feet per year).[13] Of the eighteen manufacturing businesses that currently operate in Curry County, five are wood products manufacturers and two of these

Figure 1 South Coast study area



companies have at least 100 employees.[14] Current wood products manufacturing in Curry County is anchored by South Coast Lumber Company and its affiliate, Pacific Wood Laminates, which manufactures a variety of specialty plywood, veneer, and laminate products in Brookings. In Coquille, Roseburg Forest Products operates a plywood-veneer mill, and East Fork Lumber Company in Myrtle Point harvests larger logs from nearby private and state forestlands to manufacture cut-to-order timbers and beams. A number of smaller wood products businesses produce and retail specialty products made from local myrtle and Port Orford cedar throughout the South Coast.

Although dairies have declined, beef cattle and sheep ranching remain important and there is a longstanding tradition of cultivating cranberries in both Coos and Curry Counties. Curry County is also known for commercial bulb and flower growing.[15] In 2007, the market value of all livestock products in Curry County was more than $6 million and commercial crops were valued at more than $13 million.[16]

Natural beauty and proximity to the ocean also make tourism and recreation important components of the South Coast's economy. The Kalmiopsis Wilderness Area was established in 1964 and since then significant other portions of the South Coast have been designated as wilderness areas and wild and scenic rivers. These areas are protected from certain land uses and provide significant recreational opportunities for both residents and visiting tourists.

The South Coast is also home to many businesses that work to address the legacies of logging, mining, and agriculture that are evident throughout the region. Ditching, straightening, irrigation, and removal of riparian vegetation for pasture have altered many streams in agricultural areas. Long-term impacts of logging and mining include damaged riparian areas, roads and sediment, and the reduction and removal of large wood from riparian and upland areas.[17] Restoration priorities identified through watershed assessments include sediment abatement and erosion control, in-stream habitat, and riparian vegetation and buffers.

The restoration industry

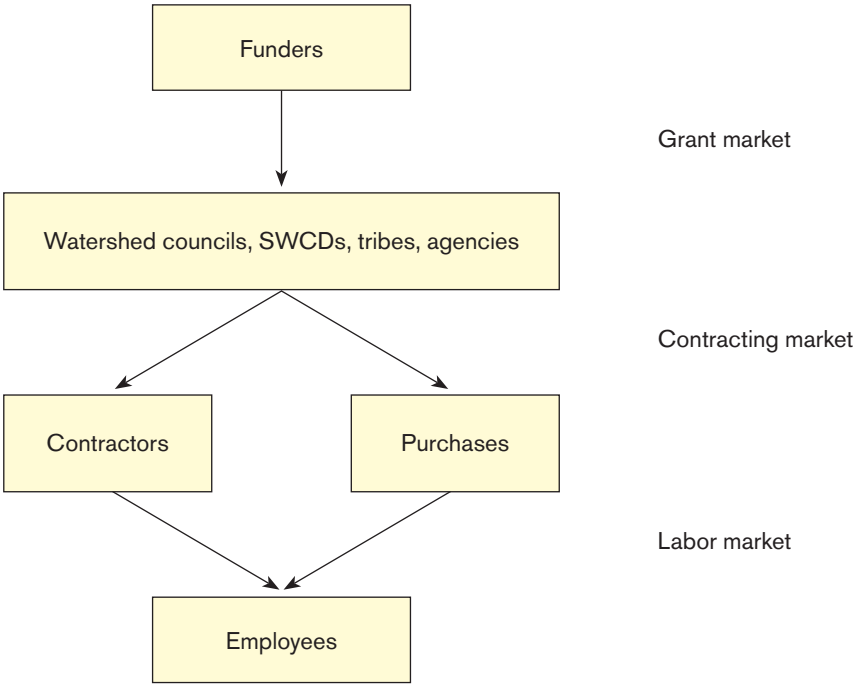
Restoration work can produce many local economic benefits for workers, businesses, organizations, and communities. These benefits are diverse and can be difficult to track and analyze because restoration work does not consistently fall into any one defined economic sector. It includes a variety of tasks from project planning and coordination to technical surveys to on-the-ground work, and can range in equipment and labor intensity. The extent to which South Coast communities realize economic benefits from restoration depends on the availability of work opportunities, the capacity of local businesses to capture these opportunities, and how and where this work takes place.

The restoration industry produces economic impacts through three markets: an appropriations-grant market, a contracting market, and a labor market (Figure 2). Through the appropriations-grant market, restoration funds from state, federal, and tribal agency budgets as well as philanthropic and other private entities are typically awarded to government land management agencies, watershed councils, soil and water conservation districts, and other local organizations and governments as well as landowners. Through the contracting market, these entities buy supplies and hire contractors and staff members to implement projects. These contractors and suppliers hire employees to do work through the labor market.

Trends in South Coast restoration investments

From 2001 to 2010, restoration investments on the South Coast totaled at least $57.6 million. This number includes federal land management agency contracts, grants, and agreements; Oregon Watershed Enhancement Board and some other state agency grants; and some private landowner spending (Figure 3). However, it only reflects money that federal land management agencies and some state agencies put out for restoration work. It does not include spending such as salaries paid to members of agency staff who plan and administer restoration work, or in-house staff members who implement restoration projects. In addition, in-kind and

Figure 2 Restoration Industry



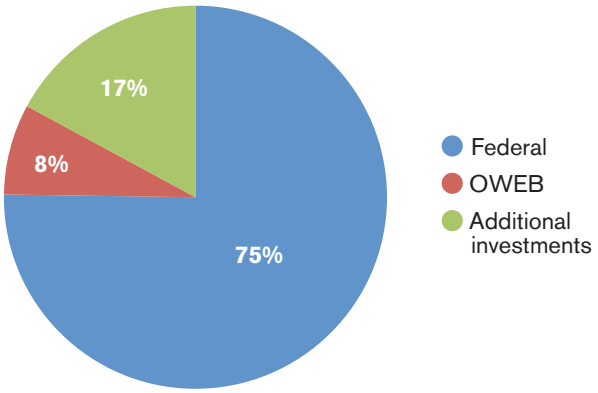
matching resources are not consistently reported and available. Therefore, the South Coast's restoration industry has likely generated more economic activity than this report can accurately capture.

Federal restoration investments

Eight federal land management agencies invested more than $43 million through restoration contracts, grants, agreements, and direct payments from 2001 to 2010. This is 75 percent of all known restoration investment on the South Coast. Twenty-five million dollars was spent in Curry County, and an estimated $18.3 million in the Coquille watershed. The higher percentage of federal lands in Curry County than in the Coquille watershed helps explain this difference. Federal agency capacity to invest in restoration relies on annual appropriations, but can also fluctuate according to policy changes (Figure 4). Federal spending spiked in 2009 as a result of the American Recovery and Reinvestment Act (ARRA). Although spending declined sharply in 2010, it remained slightly above pre-ARRA levels.

The USDA Forest Service was responsible for more than $25 million (or 56 percent) of this federal spending, investing about twice as much as any other agency (Figure 5). The Rogue River–Siskiyou National Forest (RRSNF) covers the majority of land in Curry County and the largest portion of federal lands throughout the South Coast. Since the mid-1990s, the Northwest Forest Plan has directed the

Figure 3 Total estimated South Coast restoration funding by source



Forest Service to engage in ecosystem management and restoration. Under ARRA, the RRSNF received approximately $45 million for hazardous fuels reduction, meadow and habitat restoration, mine remediation, and improvement and maintenance of road infrastructure.[18] However, the majority of this money was spent in Jackson and Josephine Counties rather than on the South Coast.[19]

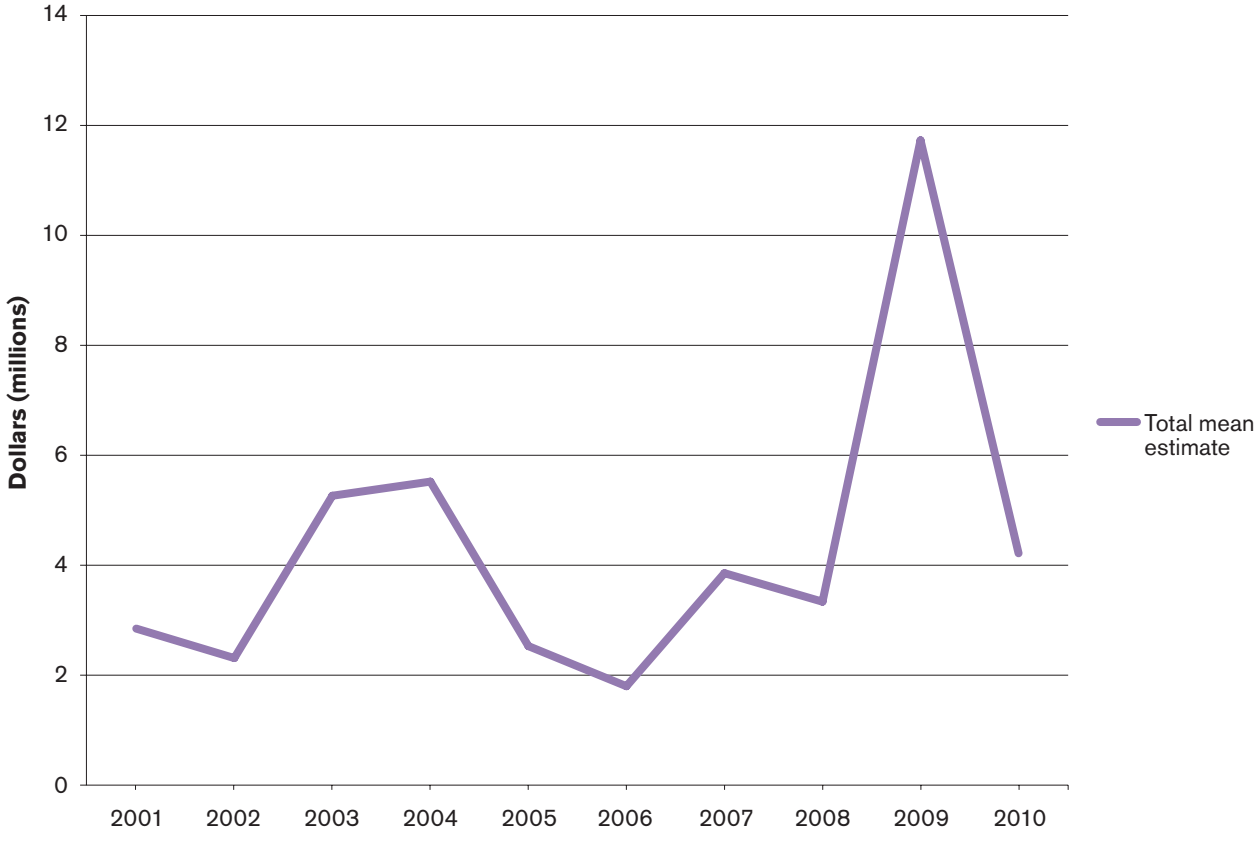
Federal grants and agreements

Federal agencies use agreements with nonprofit or other government agency partners to accomplish projects while mutually contributing resources and benefits. These partners sometimes perform this work with in-house crews, but often subcontract with businesses to perform on-the-ground work. This creates benefits in both the nonprofit and for-profit sectors. Further, by awarding grant funds or agreements to watershed councils and other partners, federal agencies can use the capacity of these local groups to coordinate and accomplish on-the-ground objectives.

Of the $11.9 million in federal restoration grants and agreements on the South Coast, $4.7 million (40 percent) was allocated to local organizations. Specifically, Indian tribes, watershed councils, and county governments each received more than $1.4 million in federal grants and agreements from 2001 to 2010 (see Table 1 on page 12).

The amount spent in grants and agreements increased temporarily in 2009 to $6.4 million, largely due to Forest Service road improvement and maintenance projects funded from ARRA (see Figure 6 on page 12). More than half of these federal grants and agreements went to the Federal Highway Administration in 2009 to improve road and bridge

Figure 4 Estimated total federal restoration investment*



*Amounts are adjusted to 2011 dollars.

safety on the RRSNF. However, these agreements also supported businesses to implement the work. Two businesses from the Coos Bay area captured more than $600,000 in subcontracts under these ARRA road projects.[20] Other ARRA projects on the RRSNF included a culvert replacement contract awarded to an Agness-based company.

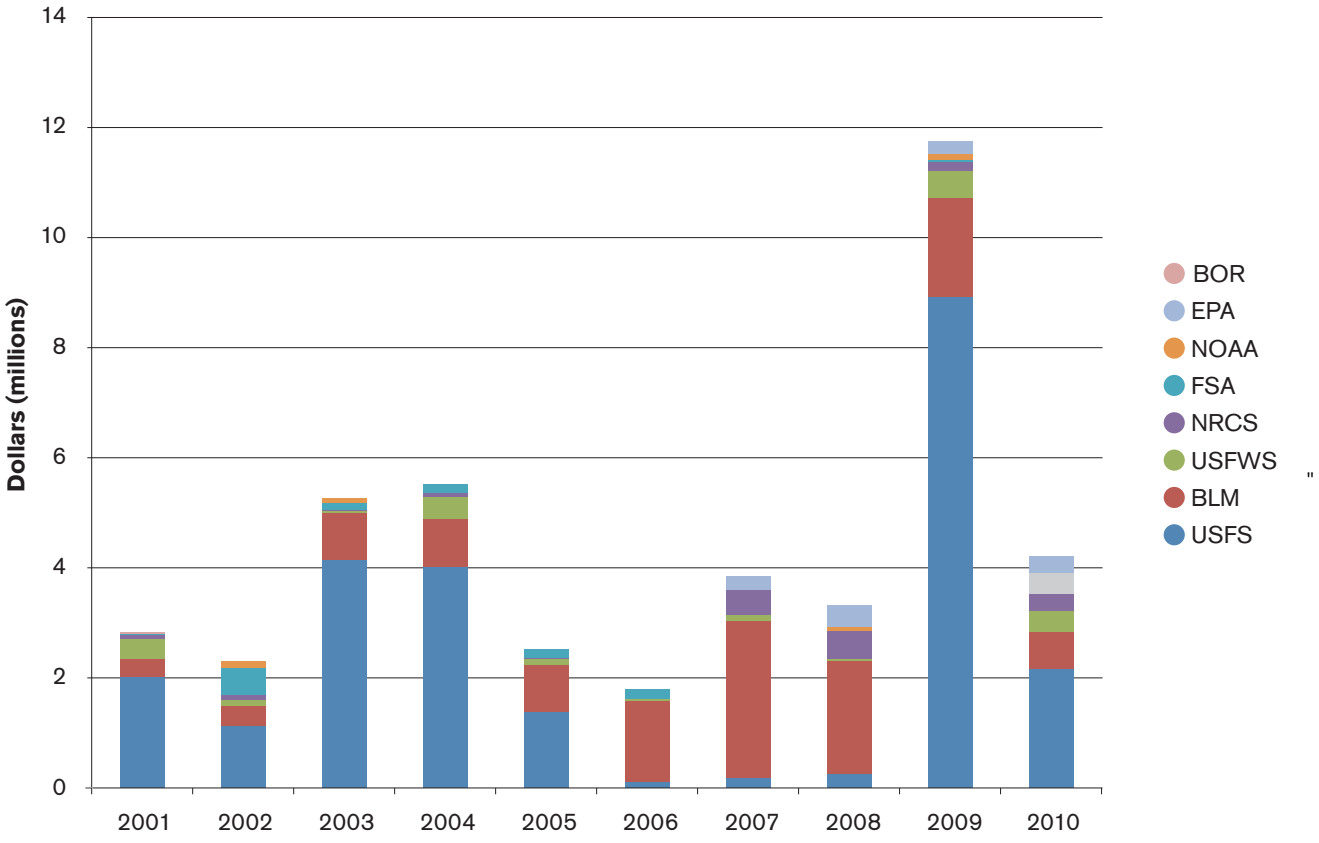
Federal contracts

From 2001 to 2010, federal land management agencies invested the $11.3 million in road maintenance contracts on the South Coast and spent $10.1 million on fish and wildlife projects and forestry and forestry-support work such as thinning and land treatments (see Figure 7 on page 13). This spending reflects a commitment of both the Forest Service and the Bureau of Land Management (BLM) to maintaining and improving their existing road networks for safety and public access while addressing erosion and water-quality issues. Federal agencies invested far less ($6.1 million) in road construction. Natural resource management priorities on the RRSNF and BLM lands have included hazardous fuels reduction and meadow restoration.

There is no sustained annual trend in these work types over time (see Figure 8 on page 13). In 2009–10, road and power line relocation projects received the most money, as ARRA directed resources specifically toward infrastructure improvement. Prior to 2009, construction projects typically received less money than road maintenance contracts. Most of the recent increase in construction is from a $3 million ARRA-funded power line project. This project relocated a power line away from restored and recontoured wetlands in the Ni-les'tun Tidal Marsh.

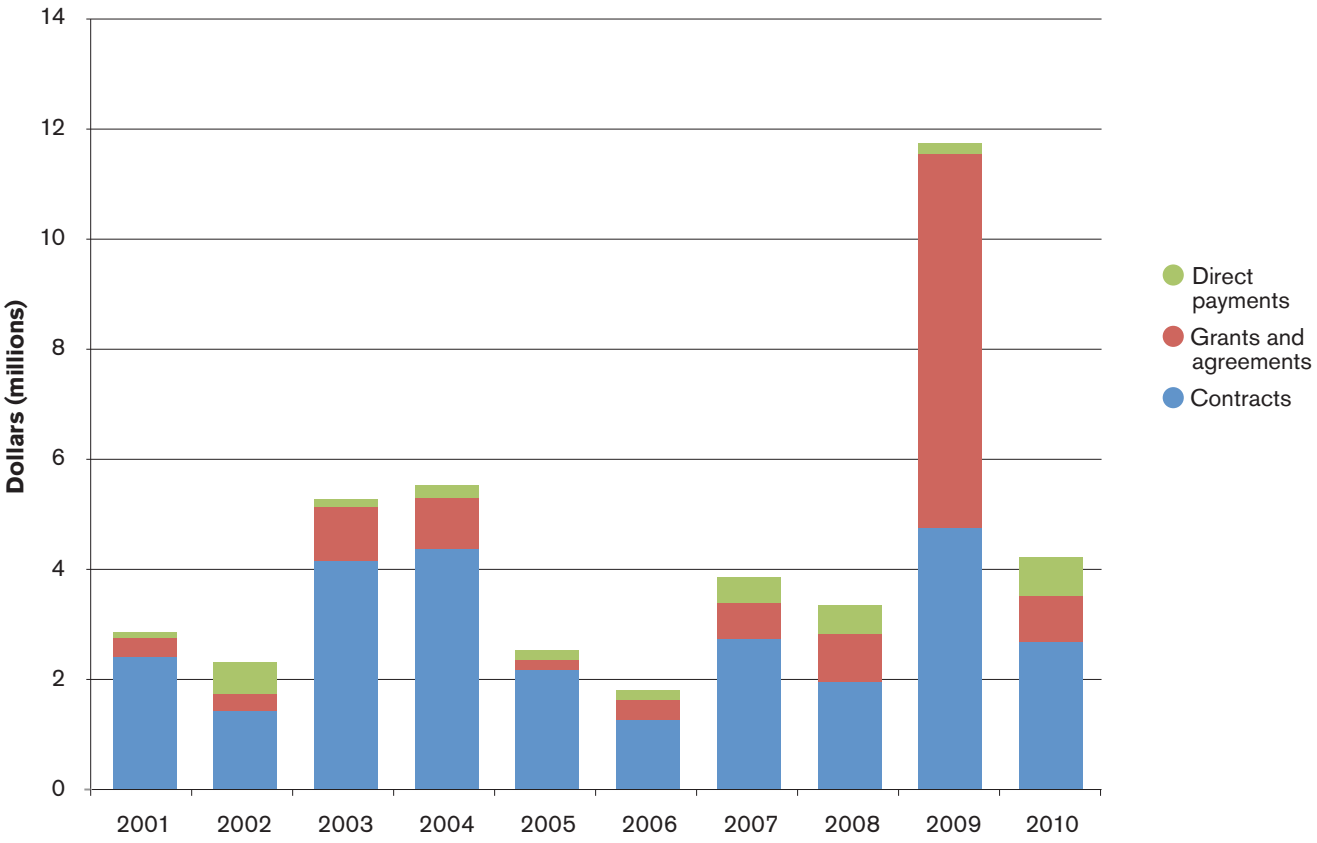
Local and regional capture of federal contracts

Figure 5 Estimated federal investment by agency*



*Amounts are adjusted to 2011 dollars.

Figure 6 Estimated federal investment by award type*



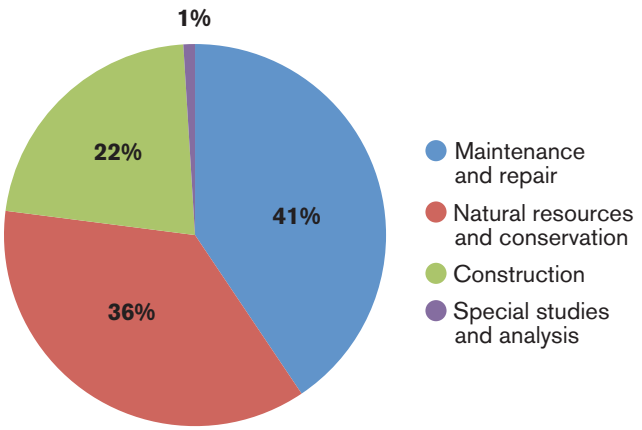
*Amounts are adjusted to 2011 dollars.

Table 1 Federal grants and agreements funding by recipient type (2001-2010)*

Recipient type	Amount	% Total
Federal agency	$ 6,596,045	55%
Indian tribes	$ 1,698,650	14%
Watershed councils	$ 1,659,069	14%
County governments	$ 1,458,083	12%
Soil and water conservation districts	$ 310,898	3%
School district	$ 108,435	1%
Other non-profit organizations	$ 67,023	1%
Total	**$11,898,203**	**100%**

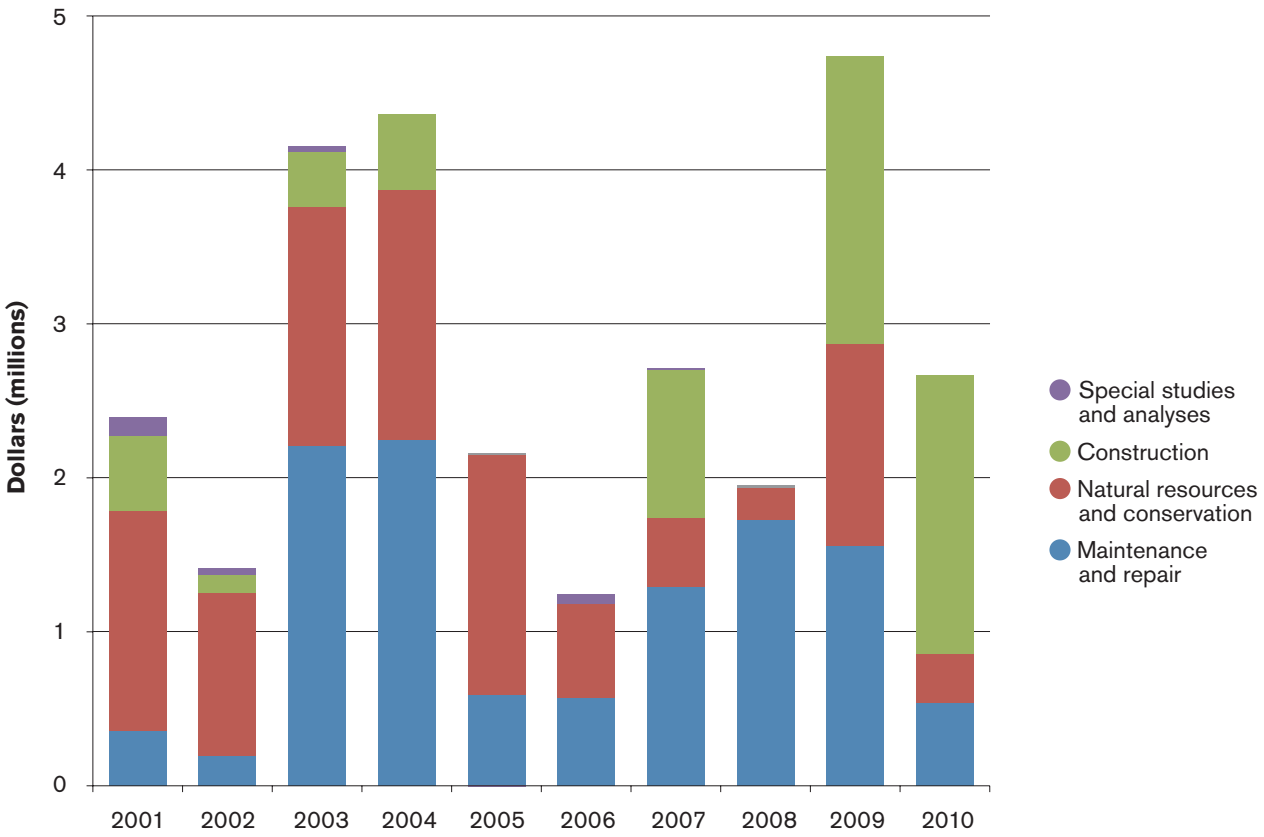
*Amounts are adjusted to 2011 dollars and only include funding with known project locations.

Figure 7 Federal contract dollars by work type



When local businesses capture contract opportunities on the South Coast, they help bring home the economic benefits of restoration. Of the almost $22 million of federal restoration contracts on the South Coast from 2001 to 2010, approximately $5.3 million (24 percent) was captured locally by eighteen contractors from the Coquille watershed and eight contractors from Curry County. Locally, contractors from Agness, Myrtle Point, and Coquille have captured the most contracted spending on the South Coast (Figure 9). Many of these contractors are located in Myrtle Point. Although Coos Bay's population is more than six times that of Myrtle Point's[21], contractors from Myrtle Point have captured more total federal restoration investments in the study area than those based to the north in Coos Bay.

Figure 8 Estimated federal contract dollars by work type*



*Amounts are adjusted to 2011 dollars.

Eighty-eight percent of this local capture was road construction and maintenance contracts shared between five companies. This suggests that the high capacity of several road and construction contractors draws the majority of restoration funding to the South Coast. The remaining $878,808 was divided among sixteen different companies for a variety of different project types including more roadwork and land treatment projects, fish and wildlife projects, and forestry and forestry-support work.

Looking at the types of work that local contractors do not capture can provide further insights into potential gaps in local capacity. Thirty-seven regional firms from counties adjacent to Curry County and the Coquille watershed captured 48 percent (or $10.4 million) of federal contract spending from 2001 to 2010. This included $6.3 million for natural resources and conservation activities such as land treatment and forest thinning, and $4 million for construction and maintenance of roads and facilities. Considering that some of the nation's largest forestry services firms are in Jackson and Josephine Counties, it makes sense that they would capture a significant proportion of natural resource management contracts. Regional contractors also captured the majority of all funds ($73,505) for special studies and analyses on the South Coast. This suggests that there is currently competitive capacity for more sophisticated technical work in the region, but not within the South Coast.

In addition, twenty-nine nonlocal, nonregional firms from elsewhere in Oregon as well as Washington, California, and Idaho captured 28 percent (or $6.2 million) of federal contract dollars spent on the South Coast. Twenty of these firms were from Oregon, which means that many economic benefits of federal restoration work on the South Coast are largely retained in the state. Most of these funds (approximately $5 million) were for construction and maintenance projects. This indicates that federal agencies are offering more restoration work suited to existing South Coast contractor capacity than local contractors are currently capturing.

Direct landowner payments

Another type of federal restoration investments are farm bill conservation programs, which pay private agricultural landowners to incorporate conservation and restoration activities into their operations. These programs are often administered through partnerships with local soil and water conservation districts. We examined direct payments through six conservation programs on the South Coast from 2001 to 2010, which totaled $3.2 million. To put this into perspective, the total value of all farm products sold in 2007 in Curry County was $21.5 million.

The most significant source of direct payments to landowners has been the Farm Service Agency's Conservation Reserve Program (CRP), which helps landowners reduce soil erosion by planting trees and other perennial covers in riparian and other vulnerable areas (see Figure 10 on page 16). This was followed by the Natural Resource Conservation Service's Environmental Quality Improvement Program (EQIP), which pays for a variety of other conservation projects on private land, and the Conservation Stewardship Program (CSP), which rewards landowners for progressively achieving conservation goals on their land.

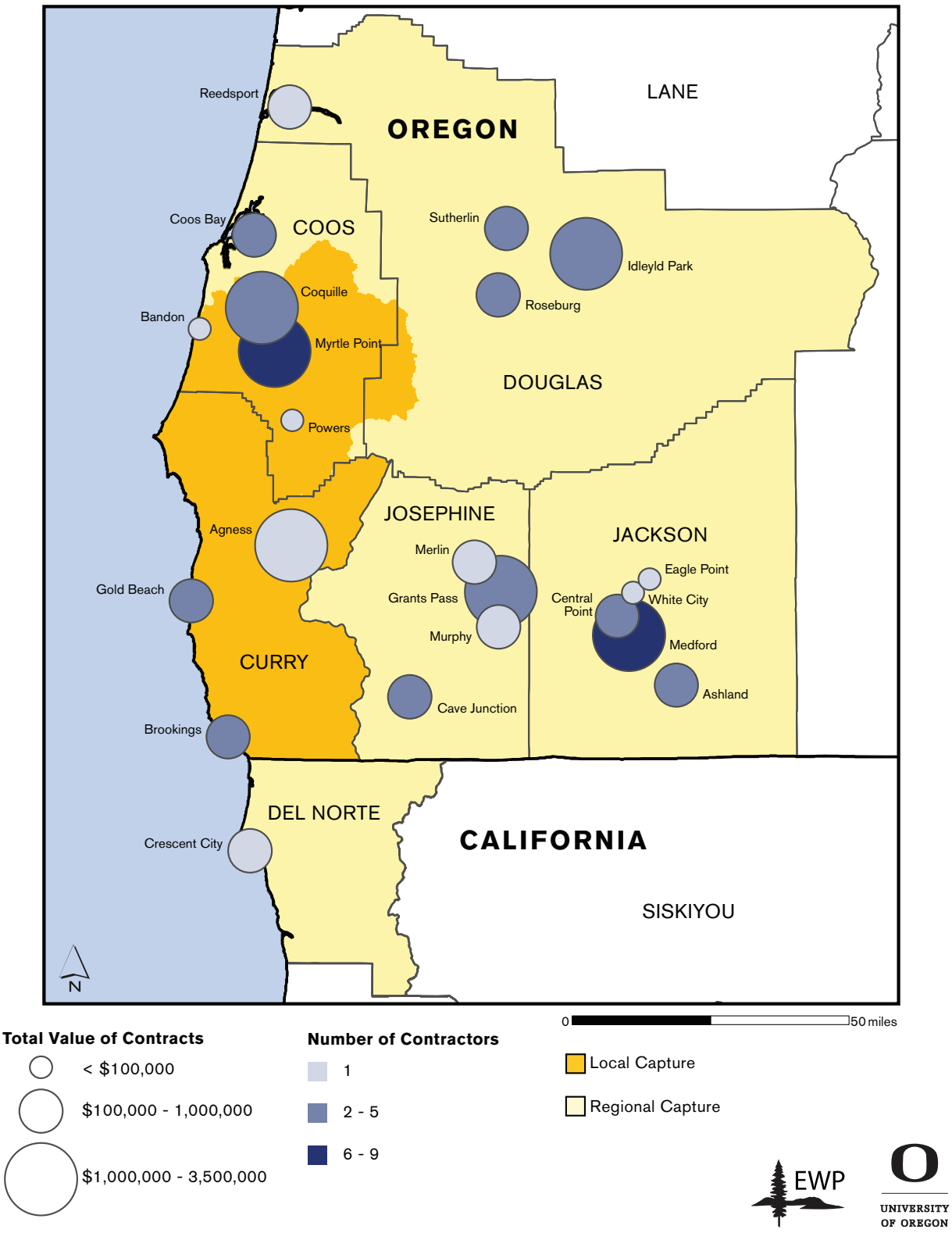
Like other sources of federal investment in restoration, farm bill conservation programs are authorized by Congress and depend on federal appropriations. Total funding for these programs on the South Coast was highest in 2002, 2008, and 2010, likely reflecting the passage of new farm bills in 2002 and 2008.

OWEB restoration investments

The Oregon Watershed Enhancement Board (OWEB) coordinates and administers a restoration grant program funded by Oregon lottery and license plate funds. From 2001 to 2010, OWEB granted approximately $4.4 million dollars to fund ninety South Coast restoration projects. These projects typically involve in-kind and partnership contributions, which are not included in this figure (see following section). OWEB estimates that for every dollar it provides in grant funds, it generates more than a dollar and a half in matching funds from private, federal, and local sources.[22]

The three major watershed councils on the South Coast received the majority of OWEB funding during

Figure 9 Local and regional capture of federal contract dollars



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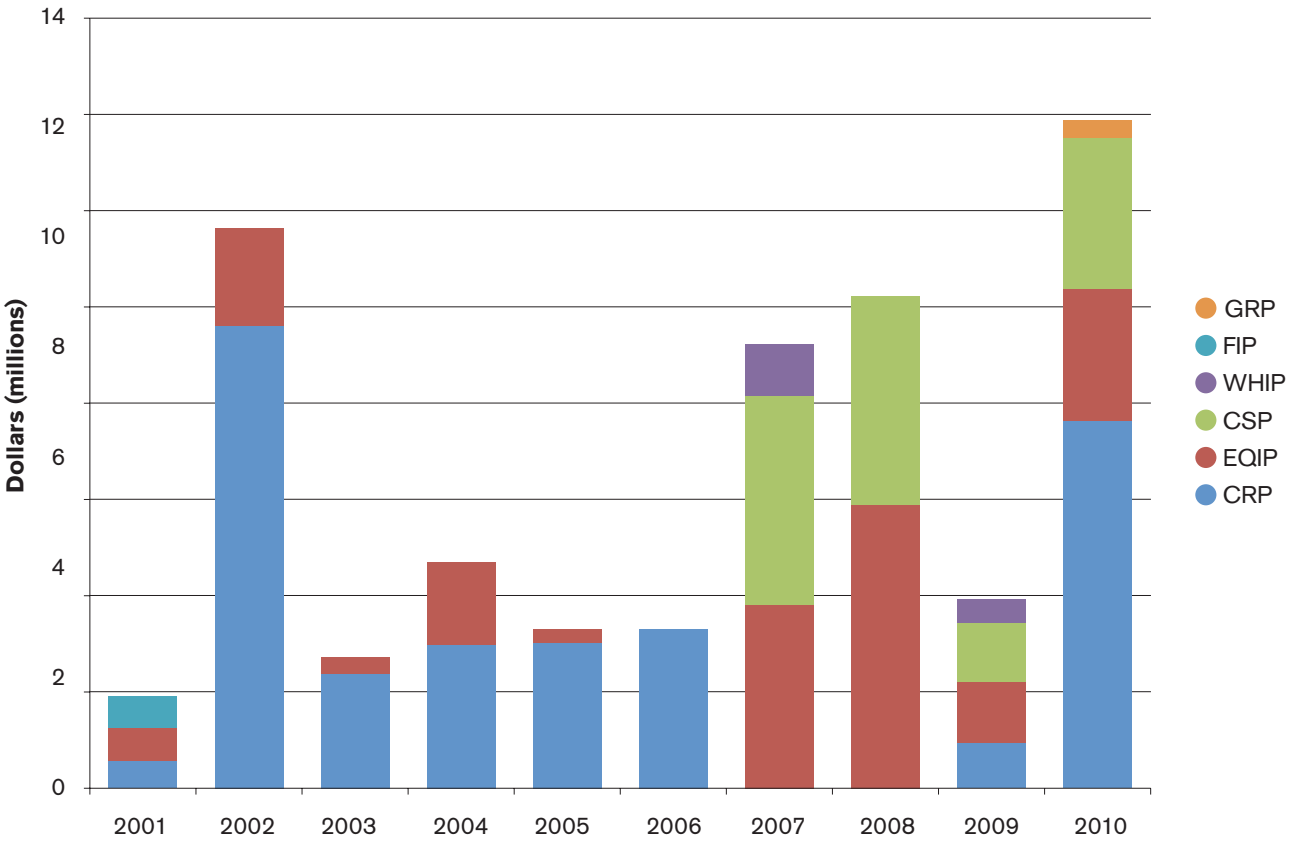
the study period (Table 2). South Coast watershed councils use these resources to implement restoration projects. OWEB also provides grants to support watershed council operations, which are not included here but are crucial to maintaining the capacity of these local organizations. In addition, nonprofit organizations such as Ducks Unlimited and The Freshwater Trust captured more than a quarter of OWEB grants between 2001 and 2010. These organizations use OWEB grants to support on-the-ground work. For example, The Freshwater Trust has planned and implemented projects to improve wetlands in Boatman Grove and riparian habitat on Fourmile Creek using local contractors.

From 2001 to 2010, total OWEB funding has been nearly equal for in-stream, riparian, and wetland restoration projects (Table 3). This distribution of funds reflects a primary goal of OWEB and the local watershed councils as established in the Oregon Plan for Salmon and Watersheds—to restore vital fish habitat—because in-stream and riparian projects can quickly alleviate some of the most pressing habitat issues such as lack of complex overwintering habitat or cool water summer habitat. OWEB funds therefore have supported opportunities for contractors to perform heavy equipment work (i.e., log placements or roadwork to remove fish passage barriers, reduce chronic introductions of fine-grained sediment, or both) as well as more labor-intensive tasks such as planting riparian vegetation.

In most years, OWEB funding has supported a diversity of project types in the study area, but there is no sustained trend in any one type of restoration work over time (see Figure 11 on page 18). Investment in

Figure 10 Estimated federal direct payments by program*



*Amounts are adjusted to 2011 dollars.

riparian and in-stream work has been most consistent during the study period, although riparian work has declined since 2008, while in-stream work has risen. This emphasis on riparian and in-stream work is due to the priorities of local watershed councils and landowners to protect erodible riparian areas and create fish habitat. Most of the wetland project funding in the study period comes from a 2009 grant for $893,365 to Ducks Unlimited. This grant was part of the largest restoration project to date in the South Coast. This project brought together thirty-nine partners to restore more than 400 acres and to more than double the amount of freshwater and tidal marsh in the Bandon Marsh National Wildlife Refuge.

Additional restoration investments

The Oregon Watershed Restoration Inventory (OWRI) is a database that OWEB established to track voluntarily reported information about OWEB-funded and other restoration projects in the state of Oregon. We used OWRI to identify a total of $9.8 million in additional non-OWEB South Coast restoration investments from 2001 to 2009. This includes matching funds to OWEB-funded projects and additional projects conducted in this area (e.g., on private timberlands). However, since OWRI is a voluntary report system, there are likely many additional matching funds that are not documented. Non-OWEB funding from state agencies was the largest source of this additional funding, followed by private industrial forest landowners and federal agencies (Table 4).

Most of the non-OWEB state funding in the database

Table 2 South Coast OWEB funding by recipient type (2001-2010)*

Recipient type	Total	% Total
Watershed councils	$ 2,876,835	65%
Other non-profit organizations	$ 1,215,559	28%
Soil and water conservation districts	$ 226,152	5%
Individuals	$ 56,545	1%
Landowners	$ 15,986	0%
Indian tribes	$ 11,123	0%
Water districts	$ 8,746	0%
Total	**$ 4,410,947**	**100%**

*Amounts are adjusted to 2011 dollars.

Table 3 South Coast OWEB funding by project type (2001-2010)*

Work type	Total cash	% Total
Instream	$ 1,204,578	28%
Riparian	$ 1,116,824	26%
Wetland	$ 1,061,764	24%
Fish passage	$ 606,989	14%
Upland	$ 326,147	7%
Other	$ 35,918	1%
Total	**$ 4,352,221**	**100%**

*Amounts are adjusted to 2011 dollars.

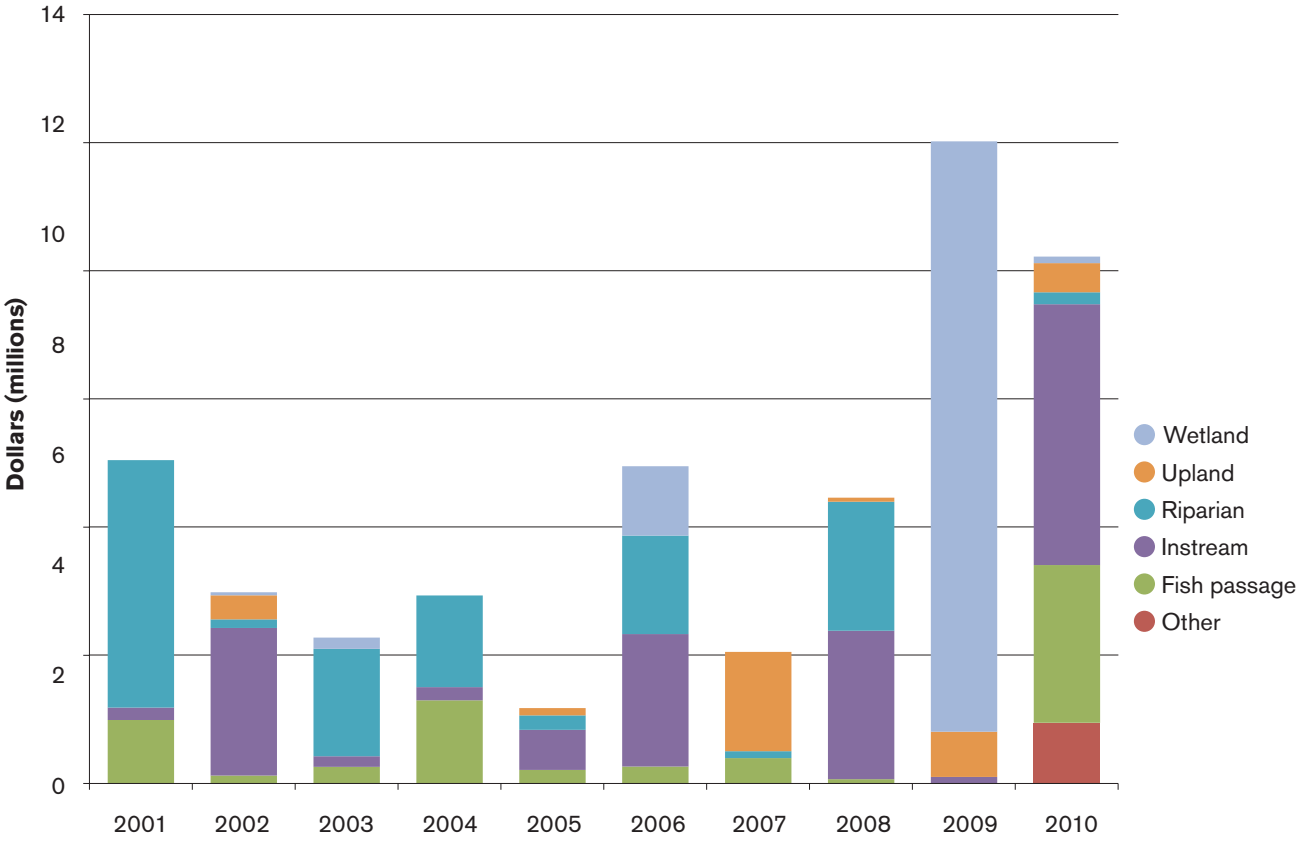
came from the Oregon Department of Transportation (ODOT), which totaled more than $3.3 million in 2001–3. This reflects ODOT's involvement in the Oregon Plan for Salmon and Watersheds through reducing road-related ecological impacts such as erosion and sedimentation. Private industrial forest landowners also spent significant amounts. From 2001 to 2006, Plum Creek Timber Company was responsible for nearly 62 percent of private industrial investments. Other private timber companies that have engaged in restoration on their lands include South Coast Lumber Company, Roseburg Forest Products, and the Menasha Corporation, all of which have representatives who actively participate in their local watershed councils.

This funding follows similar proportions of investment in riparian, in-stream, and fish passage projects as OWEB-funded projects, but shows markedly less investment in wetlands. Over one-third of this additional restoration funding went to riparian projects, followed closely by road projects (Table 5). This level of investment in road improvement reflects the efforts of private industrial forest landowners to upgrade their road networks and address the hydrological impacts of these roads.

Who is in the South Coast restoration industry?

The South Coast restoration industry consists of local organizations such as watershed councils as well as federal, state, and tribal agencies that manage land or coordinate and fund restoration projects on private and public lands; the contractors and workers who implement these projects; and suppliers

Figure 11 South Coast OWEB investment by year and project type*



*Amounts are adjusted to 2011 dollars.

who provide goods and equipment to restoration businesses and organizations. In this section of the report, we describe the role of key nonprofit and government entities, profile local contractors, discuss local contracting capacity, and present some of the gaps and barriers that make it difficult for local contractors and communities to capture and benefit from restoration work on the South Coast.

Watershed councils

In Curry County, the South Coast Watershed Council, Lower Rogue Watershed Council, and Curry County Soil and Water Conservation District work together from a shared office in Gold Beach to coordinate landscape conservation and watershed restoration. Since their inception, this Curry Watersheds partnership has implemented a diversity of restoration

Table 4 South Coast additional restoration investments by funding source (2001-2009)*

Funding source	Total cash	% Total
State agencies	$3,839,136	39%
Private industrial forest landowners	$ 2,972,483	30%
Federal agencies	$1,828,840	19%
County governments	$496,434	5%
Conservation groups	$375,572	4%
Private non-industrial landowners	$115,130	1%
City governments	$99,877	1%
Water districts	$78,982	1%
Other	$20,473	0%
Watershed councils	$18,620	0%
Soil and water conservation districts	$9,917	0%
Total	**$9,855,465**	**100%**

*Amounts are adjusted to 2011 dollars.

Table 5. South Coast additional restoration investments by project type (2001-2009)*

Work type	Total cash	% Total
Riparian	$ 3,752,593	38%
Road	$ 3,029,365	31%
Upland	$ 1,039,406	11%
Instream	$ 959,632	10%
Fish passage	$ 528,264	5%
Combined	$ 428,833	4%
Wetland	$ 82,537	1%
Unknown	$ 34,835	0%
Total	**$ 9,855,465**	**100%**

*Amounts are adjusted to 2011 dollars.

projects in the county. Restoration priorities for the partnership include sediment reduction, fish habitat creation, riparian vegetation enhancement, and hazardous fuels reduction. Their work to date has supported road sediment reduction, culvert removal and replacement, large wood placement, riparian fencing and planting, estuary and wetland restoration, and installation of off-stream livestock watering systems. The Lower Rogue Watershed Council has taken the lead on addressing hazardous fuels reduction throughout Curry County by helping create community wildfire protection plans, complete fuels reduction projects in the wildland-urban interface around Agness and Port Orford, and eliminate noxious weeds in areas with high wildfire risk.

When South Coast Watershed Council coordinator Harry Hoogesteger reflects on the economic impacts of the Curry Watersheds partnership over the years, he likens their contributions to that of a successful small business. These three entities have a shared operating budget of more than $1 million annually, and support ten full- and part-time employees. Funding from OWEB is a primary source of support for Curry Watersheds. Federal agencies and private foundations, such as the Meyer Memorial Trust and the Oregon Community Foundation, provide further resources for a sustained program of work that provides income to an estimated twenty-five to thirty local people within and outside of the partnership. Many of the in-house employees have come from outside the area with educational backgrounds in watershed management and related fields. With the opportunity that Curry Watersheds provides, these employees have been able to write their own grants and develop different projects and skills that contribute to the overall restoration of Curry County's watersheds.

Whenever possible, Curry Watersheds staff members have chosen to work with contractors and purchase supplies from businesses based in Curry County or nearby communities. The partnership maintains a list of twenty-three different contractors that they turn to for project implementation. Both Hoogesteger and his Lower Rogue Watershed Council counterpart, coordinator Maggie McHugh, are familiar with many local contractors, and are impressed with their capacity to learn and adapt to the different types of work offered over the years.

Hoogesteger thinks that in the future, watershed councils could provide a variety of services to landowners and others that go beyond the current scope of watershed restoration. These include technical assistance for landowners and developers related to geology, landscaping, and wetland surveys. Other opportunities for future involvement include biomass feasibility assessment and forestry consulting. National Fire Plan money and state funds are available for further fuels-reduction projects in these residential areas.

To the north in the Coquille watershed, the Coquille Watershed Association (CWA), founded in 1994, supports restoration project development and implementation as well as education and information sharing for landowners and the general public throughout the Coquille Watershed. The average annual CWA budget is approximately $500,000, of which 90 percent is dedicated to on-the-ground projects. Initially, the CWA focused on working with private landowners to protect and restore riparian areas on ranch and agricultural lands, but the council has grown exponentially and now undertakes a variety of projects, including wetland restoration, tidegate removal and boulder weir/Large Wood placement throughout the Coquille watershed. The CWA has partnered extensively with government agencies, natural resource specialists and the Coquille Indian Tribe to support a wide variety of restoration efforts throughout the basin, particularly to implement the Coquille Sub-basin Plan, written by the Coquille Tribe in 2007. The plan serves as a guide to concentrate restoration efforts in the Coquille River and its forks by identifying high priority areas for restoration of fish habitat.

A unique feature of the CWA is its investment in training and retaining a permanent in-house restoration crew. This crew model is relatively rare for watershed councils in Oregon and creates a reliable local workforce that can develop skills and retain knowledge without annual retraining. According to CWA Program Manager Kristle Volin, the original CWA council found a need to build on local skills in order to engage in restoration work as the fishing and logging industries in Coos County began to

shrink, and they sought funds to provide training for riparian planting and fencing, building on the skills the crewmembers brought with them from their previous work experience. Over time, the restoration crew evolved diverse skill sets, from heavy equipment operations to governmental permitting, and the CWA was able to take on a wide array of restoration work including instream projects, bridge building and culvert replacements. The CWA restoration crew has also performed contract work for several agencies and groups, including the Coquille Indian Tribe, ODFW, ODOT, Coos County and the BLM. The CWA still works with local contractors on tasks that require external capacity, such as engineering and helicopter log placement. To retain this crew, the CWA faces many of the same challenges as private contractors, including the costs of liability and worker compensation insurance, health insurance premiums and a lack of steady funding. Due to the economic downturn and a reduction in grant funding, the restoration crew currently has three full-time employees, but according to Volin, the CWA retains the capacity to expand if funding becomes more readily available in the future. All of the materials and supplies the CWA uses in restoration projects are locally sourced, from trees and fence materials to equipment rentals, and the CWA supports student-run operations, such as the Native Species Center at Powers High School, to encourage and foster investment in the local community and to continue their whole watershed restoration approach.

The Coquille Tribe

With historical ties to more than a million acres of land from lower Coos Bay to Port Orford, the Coquille Tribe has a vested interest in the restoration of forest and watershed resources throughout the South Coast. The tribe has actively promoted forest and watershed restoration, and the conservation of important cultural resources throughout its ancestral territory. The tribe's restoration efforts include direct stewardship of 5,410 acres of forestland and leadership in developing and implementing the Coquille River Subbasin Plan for restoration of the entire Coquille watershed.

Congress established the Coquille Forest in 1996 from fourteen parcels of BLM forestland, and transferred this land to the tribe and the Bureau of Indian Affairs in 1998. The Coquille Forest has required substantial restoration activity to become a healthy forest and watershed resource. Much of it is highly erodible and covered by extensive road networks. Early restoration efforts included numerous culvert replacements and replacing old skid roads with natural vegetation and mulch in order to reduce erosion and enhance fish passage. The tribe also manages forest and watershed resources on the Empire Reservation parcel, which they acquired from Sun Studs in 1994.

According to Don Ivy, the tribe's cultural resources program manager, once the tribe began restoring their own lands, they realized that their efforts would be limited without a broader restoration strategy focused on the entire Coquille watershed. Beginning in 2000, the tribe assumed a leadership role in identifying and prioritizing management activities in the entire watershed, and partnered with the National Oceanic and Atmospheric Administration's Pacific Coast Salmon Recovery Fund (PCSRF) to obtain resources for a subbasin management plan. Congress established the PCSRF in 2000 to provide financial assistance to states and tribes for salmon recovery and conservation. The first tribal projects that PCSRF funded in the Coquille watershed included streamside road improvement projects on the Coquille Forest. In 2007, the tribe used PCSRF funds to lead the effort to develop the Coquille River Subbasin Plan. This plan, tiered with the Oregon Plan for Salmon and Watersheds, identified the most important strategies for improving native coho salmon populations. From 2000 to 2008, the PCSRF awarded $458,750 to the tribe for watershed planning and assessment projects as well as for implementation of riparian habitat improvement and culvert removal, replacement, and cleaning to improve fish passage.

These and other funds have supported a number of jobs within the tribal agency and supported other local entities through partnerships and restoration contracts. Currently, the tribe has a four-person restoration crew, and on several occasions has contracted the Coquille Watershed Association to complete restoration projects. Other tribal restoration and restoration-related efforts include a forest environmental management capacity building project

focused on community outreach and water quality and biological monitoring on tribal forestlands, and promoting forest health and fuels reduction on tribal forestlands through thinning and biomass harvesting. The tribe is currently researching the potential of woody biomass as a source of renewable energy. Most recently, the tribe has obtained Forest Stewardship Council certification for the Coquille Forest, which recognizes their stewardship and efforts to protect and restore the ecological integrity of their lands.

Ivy emphasizes that the Coquille Tribe is an integral part of the larger South Coast community and will need to continue its leadership role in promoting community development and sustainable natural resource management activities on the South Coast. He says that their investments in restoration already have inspired other local organizations and landowners to follow suit. He strongly believes that their role is to restore and protect the cultural, ecological, and economic value of the landscape not only for the benefit the Coquille Tribe, but also for the entire South Coast community.

Contractors

A workforce assessment that the Labor Economic Action Project conducted on the South Coast in 1999 suggested that the region had a robust base of contractors and workers.[23] Using federal databases and information provided by local watershed councils, we identified forty contractors that have engaged in restoration work in the last ten years (see Appendix B). This includes sole proprietors and incorporated companies, several of which support employees. Twenty-one of these contractors have captured federal restoration contracts and twenty-three have worked on projects with the Curry Watersheds partnership. Curry County contractors that have performed federal work appear to have capacity for road construction and maintenance more than forestry work. Federal contractors based in the Coquille watershed appear to be more numerous and more diverse. They have worked on a greater variety of project types including fisheries, wildlife management, and fire suppression. With the legacy of road construction and maintenance on federal lands connected with a history of logging in the area, it makes sense that significant local capacity for this kind of work still exists.

In several ways, South Coast contractors resemble other restoration contractors throughout the state of Oregon.[24] Many have been in the area for more than a decade and began their business through road construction and maintenance or other heavy equipment or logging-related work. According to one heavy equipment operator based in the Coquille watershed, making a living on the South Coast has always required the need to constantly reinvent oneself and one's business model. Many contractors saw restoration opportunities, particularly in the mid-1990s when there was increased federal emphasis on ecosystem management, as a way to keep their business going when other work was less available. They successfully applied or developed their equipment capacity and skills to engage in this work. Still others came to restoration work because they believe it is the "right thing to do" for the environment. According to watershed council representatives, many South Coast contractors see restoration work as important to their business, and try to be available when a work opportunity arises.

While contractors from outside the South Coast have captured a significant portion of federal restoration funding in the past decade, this work has still helped support a variety of local businesses. Local capacity is strong for heavy equipment–based restoration work related to fish passage, road decommissioning, and other erosion control measures. For at least three local heavy equipment and construction contractors, federal construction projects make up the majority of their recent workload. However, these contractors often have to travel elsewhere to find much of this work and have begun to focus their efforts throughout the west to sustain their businesses. Some South Coast contractors are former or current loggers who have adapted and applied their heavy equipment and logging skills to in-stream fish habitat improvement and other wildlife habitat projects. Other restoration work that South Coast contractors have tended to capture includes thinning and hazardous fuels reduction, tree planting and seed collection, noxious weed removal, riparian fencing and planting, and off-stream livestock watering projects.

TJB Enterprises Inc.
Owner: Terry Bair
Location: Myrtle Point, Oregon
Employees: Up to seven at a time
Established: 1989

Scott Shaw Logging
Owner: Scott Shaw
Location: Myrtle Point, Oregon

When TJB Enterprises owner Terry Bair bid on his first in-stream fish habitat improvement contract in 2001, it was natural to ask his friend and fellow logger Scott Shaw to help. Both Bair and Shaw have spent most of their lives logging big trees on the steep slopes of Oregon's South Coast, and agree that loggers like them are the best people to do this type of restoration work. Since 2001, they have worked side by side on four fish habitat restoration projects on the South Fork Coquille River, and two more in neighboring Josephine County.

Bair and Shaw have found restoration work to be a "challenging form of recreation" where they can apply their "goofy ideas" and innovate ways to improve fish habitat. One of Bair's oldest pieces of logging equipment, a yarder designed for old-growth logging, has proved to be incredibly useful for pulling over trees and placing large logs in streams. These projects require carefully arranging several different sizes of logs together at varied angles and heights. With their years of experience and crews of skilled loggers, Bair and Shaw are able to work in ways that maximize ecological benefits while minimizing ground disturbance and log breakage. Forest Service contracting officers that have inspected their work are especially pleased with their attention to detail and highly recommend them for future projects. Specifically, one Rogue River–Siskiyou National Forest contracting officer noted that "the contractor took care to minimize ground disturbance and . . . it was obvious that the contractor paid attention to detail. . . . The government received a quality, timely service."

Although logging still makes up the bulk of their work, restoration contracts have provided Bair and Shaw with additional opportunities to earn income and support their workers. Restoration projects have filled crucial gaps during winter months when the private timber companies they usually work with are not logging. Projects like these have provided loggers from the Coquille watershed who had lost their jobs in the forest industry to continue to work in the woods. A further benefit of restoration work is that while loggers often travel long distances to work, most of their restoration projects have been close to home. This allows workers to spend more time with their families and in their communities. Shaw says, "If you get a job within two hours from home, you're doing good."

Both Bair and Shaw recognize that they are playing an important role in the restoration of a landscape transformed by decades of harvest. Over time, they have witnessed the Forest Service's growing commitment to stewarding water quality, fish habitat, and soil integrity as well as the agency's new understanding of watershed dynamics. When Bair first started logging, it was standard practice to clear streams of large wood that was thought to block fish passage. Today, as he returns wood to water, he sees gravel beds and spawning fish—firsthand evidence that his work is making a difference.

Houshour Inc.
Owners: Kevin and Deb Houshour
Location: Myrtle Point, Oregon
Employees: One to four at a time
Established: 1983; incorporated in 1994

For twenty-one years, Kevin and Deb Houshour have run a restoration business in the Coquille watershed. Before starting their business, they planted trees on timberlands near Roseburg, thinned forests, and picked apples while living in their van. As they worked, the couple observed how logging and pesticides used in reforestation were affecting the woods and waters that they loved. In the early 1990s, their passion for reducing pesticide use in forests and near streams led them to purchase an articulated tractor and start brushing roadsides for the Bureau of Land Management (BLM), the U.S. Forest Service, and the Oregon Department of Transportation. The Houshours have since deliberately sought contracts with federal and state agencies, watershed councils, and other entities to build their business around forest and watershed restoration.

Restoration work was plentiful enough through the late 1990s that the Houshours were able to steadily invest in new equipment and skills, and have made 95 percent of their business from restoration. After the implementation of the Northwest Forest Plan, the Forest Service's growing emphasis on ecosystem management created extensive opportunities to perform new kinds of restoration projects. Kevin Houshour describes the 1990s as a "long period of learning" wherein they and other local contractors regularly tried their hands at novel projects. Their regional BLM office also began to focus on "whole drainage" approaches to restoration, creating opportunities to explore diverse types of projects across larger landscapes. As a result, Houshour says, he can see how the impact of their work is part of a bigger picture.

As a result of their dedication to learning, the Houshours now skillfully perform a great range of restoration work. They have supported fish habitat by installing hundreds of culverts and other fish passage structures, creating pools and spawning beds for coho salmon, and placing large wood in streams. Further, they have performed many miles of road brushing, maintenance, and decommissioning, and restored dairy pastures to wetland by opening diked fields to tidal waters.

The Houshours remain committed to restoration work because they want to actively help restore and protect ecosystems that forestry and agriculture have damaged. Like many other local contractors, the Houshours enjoy restoration projects because of the innovations and challenges they offer. The Houshours' mission has been to learn by doing, "constantly reinvent " themselves, and follow new opportunities. They identify with the entrepreneurial spirit of much of the South Coast, where rural people actively piece together many professions and sources of income. As they note, the Coquille watershed that they call home has "always been in a recession," but this difficult economic context has fostered a local capacity to find work and to "make things work".

Fortune's Bulldozing and Grading LLC

Owner: Richard Fortune
Location: Coquille, Oregon
Employees: Five core employees and more, depending on the job
Established: 1990

When Richard Fortune arrived in the Coquille watershed in 1990, he brought years of experience as an engineer for the Marine Corps and in the private sector in California to establishing his business. As a result, Fortune's has been able to offer a great range of construction services, including bulldozing, paving, bridge and road construction and maintenance, and grading. But for every mile of road they have helped create, Fortune's has perhaps removed even more in the name of restoration. Fortune looked to build his business around the opportunities that the South Coast's landscape presented in the 1990s, and found those opportunities were in restoration work. Road decommissioning, primarily on federal lands, became a major component of their business. Fortune's has also developed expertise in culvert replacement, bank stabilization, and water bar creation.

Restoration work has led Fortune's to work according to high standards. They attend annual construction conventions to train their crew and obtain new skills, and frequently use the classes and resources that the Small Business Administration offers. In 2004, Fortune's tackled a challenging road decommission project on the Umpqua National Forest near Steamboat, Oregon. Their crews took three months to obliterate the road and restore fish passage—tasks that had been slated to take two years. The Forest Service, observing how skillfully Fortune's had handled the complicated job, selected the project as an example of innovative restoration practices. Since then, many Forest Service and BLM staff members have visited the site to learn from their work.

Over the years, Fortune's has worked across public and private lands in seven western states. The business sustains a crew of five core local employees, and tends to hire temporary local workers on-site when traveling to jobs. To purchase material, they typically request quotes from several suppliers, and try to buy locally when possible. No matter where he works, Fortune says, his crews benefit the local economy by purchasing fuel, supplies, lodging, and food. Increasingly, Richard has taken on projects outside the South Coast area, but he sees a need for more local restoration work, and would "love to work closer to home" if more jobs were available.

C Valentine Construction Inc.

Owner: Charlie Valentine
Location: Langlois, Oregon
Employees: Two to three at a time
Established: Incorporated 1996

Charlie Valentine has been at the forefront of in-stream restoration on the South Coast. Several years ago, the Curry Watersheds partnership (South Coast Watersheds Council, Lower Rogue Watershed Council, and Curry Soil and Water Conservation District) was looking for a local contractor to help implement some of the partnership's fish habitat restoration work. Their search led to Valentine, a local contractor with extensive experience building logging roads and other construction and agricultural work. Over time, Valentine developed a close working relationship with the Curry Watersheds staff. While honing his restoration skills on the job, he became their "go-to guy" for in-stream restoration projects. The Curry Watersheds partnership has remained an important customer for Valentine, allowing him to diversify his business by offering watershed restoration work opportunities. Valentine says, "Those guys have been really super to work with. For them it is more than a job. They really believe in what they do, and it makes me to want to do a good job."

Valentine owns a wide variety of heavy equipment and has found a way to do just about anything that he is asked. Often, as he works to improve fish habitat, he must place a number of large logs in-stream with multiple machines. His favorite restoration project involved placing several large logs in Jim Hunt Creek, a tributary to the Rogue River. He enjoyed the challenge of having to use several pieces of machinery to move single logs that were up to ninety feet long and big enough to fill an entire log truck. Another reward of restoration projects for Valentine has been results of his work; he enjoys seeing spawning beds developing where there had once been only bare bedrock.

Although Valentine still builds logging roads and helps farmers with their agricultural enterprises when the work is available, placing large logs into South Coast streams for fish habitat has come to comprise the majority of his work. In fact, he says that with the economic downturn and severe reductions in logging road construction and maintenance, restoration work has been the blessing that has kept him working through tough times.

Agness Company

Owners: Larry and Clare Bowen
Location: Agness, Oregon
Established: 1991
Employees: Equivalent of eight full-time jobs

Larry and Clare Bowen live in the small community of Agness, perched between the Rogue River and deep Douglas fir forests. When they first moved to Agness in the early 1980s, they operated a guest lodge on the river. At that time, their town was home to a booming timber industry and tourism economy. However, the timber industry declined rapidly by the late 1980s as a result of decreased logging on the Siskiyou National Forest. Agness residents have seen their school close and their young families leave. Tourism continued, but proved unreliable as a means of primary income for the Bowens. In 1991, they decided to form their own construction and landscaping business—the Agness Company.

Over the years, the Bowens have continually adjusted their business model to meet their community's infrastructure needs and capture new opportunities. This has led them into installation and maintenance of residential and commercial septic systems, road maintenance, excavation, site preparation, and other major construction services. Today, restoration work has become an important chapter in the Agness Company's ongoing story of innovation.

Since Agness is surrounded by public lands, federal agencies like the USDA Forest Service present significant business opportunities. The Agness Company first became involved with the Forest Service in 1991 through a small contract to grow grass seed. Since then, the company has undertaken road construction and maintenance projects for both the Bureau of Land Management and the Forest Service. These include a multiyear road maintenance contract with the Forest Service on the Gold Beach and Powers Ranger Districts, and culvert replacements in the Brookings area as part of the American Recovery and Reinvestment Act. These projects have helped reduce sediments and improve fish passage in the lower Rogue River watershed.

According to Clare Bowen, restoration projects have boosted their business in a number of ways. First, the Forest Service's best-value contracting approach has encouraged the Agness Company to consistently perform high-quality work. Second, the multiyear contract has provided the stability that the Bowens need to maintain and invest in their business. They have purchased a new 40,000-pound excavator, learned new erosion control techniques, and gained other skills and experience that position them to compete for similar projects in the future.

Restoration projects have also helped the Agness Company develop a skilled and dedicated local workforce. Viable employment has been limited in Agness. As Bowen remarks, "since logging has shut down, there has been severe poverty. So by paying high wages, or even just steady work…we have been able to help families." But the Bowens create more than paychecks. They have also invested in worker training, certification, and learning on the job. Reflecting on their Forest Service culvert projects, Bowen says, "Our workers are gonna be way stronger when it's done. They will have confidence! And accomplishment, and more skills, new skills."

How restoration work affects contractor capacity
Restoration work has produced many benefits for South Coast contractors. First, it has given them opportunities to diversify their businesses. For example, some contractors and employees are former or current loggers who enjoy using their skills and equipment in restoration. Rather than having to sell little-used logging equipment, for example, contractors can perform log placements and keep their equipment in working condition. Another example is local landscaping contractors, who have begun to seek fuels reduction projects in forested residential areas to keep their crews working.

Second, restoration projects have also helped contractors provide work to employees and subcontractors when they may be otherwise unemployed. For some South Coast contractors, even just one restoration contract can substantially augment their income and keep their workers employed. As a result, restoration jobs have helped many contractors achieve the stability and predictability they need to make capital investments in their equipment and skills. For example, one contractor was able to invest in new equipment and training for their workers after receiving road construction and maintenance contracts from the Forest Service. This equipment and training allowed them to increase their skills in restoration-related roadwork, and has made them more competitive for other restoration opportunities. According to one technical contractor who works closely with watershed councils in the area, on-the-ground experience with restoration work also helps build knowledge about the local landscape, which results in a better reputation and more work opportunities.

Third, restoration can also reward contractors for their skills and reputation through best-value contracting processes that award contracts based on who will do the best job rather than best price. For example, one local contractor successfully bid on a multiyear road maintenance contract based on individual task orders. This format ensured a fairly steady supply of work over the course of the contract and provided opportunities to invest in their own equipment and for their workers to develop new skills. Fourth, restoration projects give contractors the opportunity to work close to home and help steward the land where they live.

Gaps in local contracting capacity and limitations of the current restoration industry
Although many of the contractors on the South Coast have embraced restoration work and developed diverse skills, there are a few gaps in local restoration capacity. These gaps are largely related to a lack of access to advanced technical skills. Local contractors did not capture any federal funding for special studies and analyses on the South Coast from 2001 to 2010. Local civil engineers sometimes have a hard time extending their skills to the landscape and restoration project design. The work opportunities have not been consistent enough to promote this kind of capacity and there are plenty of other able contractors throughout the Pacific Northwest that compete for these contracts. According to Curry County watershed council representatives, local contractors could become more competitive if they developed their capacity for bioengineering and erosion control, increased their understanding of principles of geomorphology, and built other technical skills in project design. These skills are becoming more important as "low-hanging fruit" projects have been accomplished, and watershed councils and agencies are beginning to look at more complex and skill-intensive work. Further, having local capacity to conduct more technical work would help reduce the costs currently associated with procuring services from outside the South Coast.

Contractors and others interviewed for this study also identified several barriers to capturing restoration work, and for the restoration industry to expand in importance on the South Coast. Unlike some other parts of rural Oregon, the South Coast has a fair density of contractors with the capacity to conduct watershed restoration activities. According to several local contractors and watershed council staff members, there has been a lack of adequate and right-sized local project opportunities, and a reliable supply of these opportunities. Without a predictable stream of projects, contractors cannot readily invest in their businesses or workers. Some local contractors have found that some of the projects that federal agencies offer are too small to justify the costs

of mobilizing equipment to a project site. Yet other contractors may be too small to bid competitively on larger projects. Since federal contract solicitations occur online, there are high levels of competition from beyond the South Coast. In addition, federal spending on restoration is likely to decline over the next several years, further limiting opportunities for South Coast contractors to find local work.

In response to the lack of adequate work on the South Coast, some larger contractors with significant resources and the capacity to provide diverse services have expanded their work across a wider geographic range. But these contractors would prefer to work closer to home so that they can be with their families, participate in their communities, and avoid higher fuel costs associated with extensive travel. Traveling to work also makes them less available for local projects. For other contractors who have tried to remain solely local, they have had to continue to focus on nonrestoration work like logging and residential construction. However, these sectors have declined in the past ten years, making it harder to support their businesses.

A second major barrier to local restoration work is the lack of a coherent, consistent way to link local contractors to available work, particularly with federal and state agencies. Most federal contracting opportunities are advertised through government websites. Several contractors reported that they would prefer to find out these opportunities through the mail as they did in the past, because these websites are difficult to navigate to find and bid on suitable contracting opportunities. Contractors worry that they may be missing solicitations because they are not accessible or posted for very long. Contractors also feel that they know less about each other and the "playing field" for each project since federal contracting procedures no longer allow the agency to release information about unsuccessful bidders. This hampers their ability to understand and construct competitive bids.

Employment and economic impacts of the South Coast restoration industry

Using economic multipliers that the Ecosystem Workforce Program has developed to measure the impacts of forest and watershed restoration in Oregon nonmetro counties like Coos and Curry,[25] we estimate that from 2001 to 2010, the total restoration investment of $57.6 million from federal, state, and other sources has directly supported approximately forty-three local full- and part-time restoration jobs

per year on the South Coast. An additional thirty indirect jobs per year have been created by businesses purchasing materials and supplies, and the household spending of restoration workers. Job creation numbers were highest in 2009 as a result of increased federal funding from the American Recovery and Reinvestment Act.

We estimate that these seventy-three direct, indirect, and induced jobs per year represent approximately 0.3 percent or one of 300 of the total average nonfarm jobs (26,870 jobs) per year for Coos and Curry Counties from 2001 to 2010.[26] The estimated total local economic output from this work to the South Coast has been $32.1 million. This is the value of all South Coast goods and services produced during restoration project planning and implementation, through purchasing of materials and supplies needed to conduct restoration activities, and when workers involved in restoration spend their earnings on housing, utilities, food, and other consumer goods and services.

Generally, the economic benefits of restoration per dollar spent are higher in nonmetro counties like Coos and Curry than in the larger metro counties in Oregon. Specifically, restoration investment in nonmetro counties supports almost 40 percent more jobs, 60 percent more in wages, and 30 percent more in economic activity than equal restoration investments in metro counties.[27]

We estimate that federal funding has supported approximately three-quarters of the total local jobs and economic output of restoration work on the South Coast (Table 6). The remaining jobs and economic output are due to OWEB-funded restoration projects and additional restoration investments including non-OWEB state funded projects and projects on private industrial forestland.

Other economic benefits of restoration

Other economic benefits from restoration on the South Coast include improved roads infrastructure and land productivity, healthy fisheries, and avoided costs from degraded watersheds. This study could not quantify these benefits.

High-quality road infrastructure

Road projects not only reduce ecological impacts and enhance fish passage, but also provide significant socioeconomic benefits for local communities and businesses. For example, the impact of the extensive rehabilitation of the Agness Road that connects the small town of Agness to Gold Beach and Powers have created a safer road that will provide year-round access for daily commuters, school buses, emergency vehicles, commercial traffic, and recreationalists. Further, the extensive restoration of both public and private forest roads not only improves access but also reduces maintenance costs.

Productive working lands and avoided costs

Forest and watershed restoration can also increase the productivity of these lands and reduce the costs of environmental degradation in several ways. For example, thinning forests can improve forest productivity and reduce fire risk to homes and valuable timber resources. Riparian buffers along streams protect stream banks and prevent the loss of agricultural lands due to erosion. In addition, improved water quality may help South Coast communities save

Table 6 Estimated economic impacts per year by funding source (2001-2010)*

Funding source	Total funds	Direct jobs/year	Total jobs/year	Total output
Federal investments	$43,326,816	31.9	54.2	$ 24,176,363
OWEB investments	$4,410,947	3.2	5.5	$ 2,461,308
Additional investments	$9,855,465	8.1	13.7	$ 5,499,349
Total	**$57,593,227**	**43.2**	**73.4**	**$ 32,137,021**

*Amounts are adjusted to 2011 dollars and do not include additional investments for 2010.

on water treatment costs. At least one local water district on Floras Creek in Curry County has seen its treatment costs decline as a result of upstream restoration work.[28]

Vital fisheries

Another corollary benefit of restoration is improved fisheries, which provide sustenance and recreation revenues to the local economy. For the past several years, native coho salmon populations have been off-limits to recreational fisherman in many coastal rivers but with populations increasing, the Oregon Department of Fish and Wildlife has recently allowed a limited annual quota. The department estimates that the total economic impact of the recent wild coho salmon sport fishing season on the Coquille River in 2011 was more than $2.1 million.[29] Further, the estimated annual economic benefit to west coast residents of salmon and steelhead sport fishing on the Rogue River is valued at $16 million while commercial fishing is valued at $1.4 million.[30]

Realizing a robust restoration industry

To expand the economic impact of restoration on the South Coast, key stakeholders could collaborate to assess workforce capacity and needs, develop an action plan, and implement and monitor this plan. Their collaboration could focus on creating the following:

1) In-depth understanding of business and workforce capacity and likely future trends in restoration spending
2) A network of partners to better coordinate and leverage the economic benefits of restoration work across whole watersheds and the region
3) Increased availability and predictability of a range of work opportunities and funding
4) Federal, state, and watershed council contracts that are structured in size and scope to fit local contracting capacity
5) Support for local contractors to consistently connect to and capture these jobs
6) Systems for tracking and sharing these impacts

Steps toward a new strategy

The South Coast is already rich in partnerships, with the Curry Watersheds group members working together in Curry County, and the Coquille Tribe leading the implementation of the Coquille River Subbasin Plan with many partners. The recently formed Wild Rivers Coast Alliance (WRCA) also has united diverse stakeholders and funders who are committed to increasing restoration resources and opportunities on the South Coast. However, the South Coast may benefit from a region-wide network dedicated to fostering restoration as well as a deliberate strategy to understand and maximize the economic benefits of this work.

A broader network of restoration practitioners and funders could increase restoration opportunities by linking local organizations with regional, government, and private foundation partners for mutual benefit. Local stakeholders such as watershed council coordinators, Coquille Tribe natural and cultural resources staff members, or business leaders could provide perspectives on their needs and priorities from the ground, while regional or other external partners could help connect these local leaders with a broader suite of resources and a "louder voice."

A potential first step toward a restoration network and regional strategy may be to convene leaders from Curry Watersheds, the Coquille Tribe and its partners, and WRCA to discuss common goals and a vision for increasing the economic impact. Reviewing this report and discussing its findings could help these parties build collective understanding of the current strengths and areas for improvement in the South Coast's restoration capacity.

Conducting a formal workforce assessment could also help South Coast leaders obtain valuable information that would help them understand how to better link restoration needs with the capacity of local contractors, and how to assist contractors and foster local work opportunities. In this report, we cover several dimensions that would be found in a workforce assessment, including volume and trends in restoration work, and contractor capacity and interest in local opportunities. However, leaders in South Coast restoration may find it useful to obtaining further or more specific information on topics we have not covered as extensively, such as contrac-

tor business models, equipment and skills, working conditions, and job quality. Guides for conducting a complete workforce assessment are available through the Ecosystem Workforce Program.[31]

Fostering the South Coast restoration industry

If South Coast leaders do gather adequate information about their local workforce and needs, they could develop a strategy for increasing the economic benefits of restoration. Several collaborative groups and researchers in the Northwest have created action plans to accomplish this.[32] These action plans typically set goals to augment and leverage existing strengths, address capacity gaps, and assign responsibilities to specific entities. On the South Coast, an action plan could help key leaders decide how they want to increase the impact of existing strategies such as the Coquille River Subbasin Plan. If South Coast partners chose to develop an action plan, we suggest including the following strategies based on the findings of this report:

Increase range and availability of work opportunities

South Coast contractors desire more consistent opportunities to perform and support local restoration work. South Coast leaders could therefore seek ways to generate stable, diverse flows of benefits from federal investments. This might involve encouraging federal and state agencies as well as local municipalities to

- *Maintain a steady flow of available projects.* Since the Rogue River–Siskayou National Forest (RRSNF) received such substantial ARRA funding for hazardous fuels reduction and other restoration work, they have completed many National Environmental Policy Act–ready projects. Their NEPA process could steadily produce more "shelf stock" to maintain project availability and work predictability.
- *Increase work opportunities on the South Coast.* The RRSNF tends to invest in fuels reduction projects in fire-prone Jackson and Josephine Counties. Helping the RRSNF understand the value of their investments to the South Coast area could encourage increased attention to South Coast restoration needs.
- *Coordinate with upland restoration efforts.* The Forest Service's new watershed condition framework has directed national forests to assess the health of their watersheds, and target the parts of priority watersheds for restoration. This could provide a unique opportunity for watershed councils and soil and water conservation districts, which have been largely working lowland and downstream, to coordinate with the RRSNF to connect upland and lowland restoration efforts.
- *Use stewardship contracting to support restoration on all lands and produce diverse project opportunities.* Watershed councils on the South Coast are interested in using stewardship contracts for forest thinning on public lands to promote late-seral forest habitats, and fund restoration on both public and adjacent private lands. In addition, stewardship contracting can be structured to provide projects accessible to smaller contractors, and to share risk.
- *Use best-value contracting criteria to incentivize contractor excellence and skill development.*
- *Support the development of environmental markets.* Utilizing a regulator-approved water-quality trading framework, the City of Medford and Metropolitan Wastewater Management Commission (Eugene) were able to meet their Clean Water Act permit requirements by purchasing certified temperature credits derived from restoration actions. This will lead to more than 500,000 plantings across thirty stream miles in five to seven years. The same tools and mechanics can be utilized to drive restoration in the South Coast as water quality requirements tighten in the Coquille River basin in 2012, the Sixes River and Chetco River basins in 2013, and the Coos River basin in 2014.

Diversify core restoration funding streams

Heavy reliance on a few funding sources could hamper the future resilience of the South Coast's restoration industry. Although Oregon Watershed Enhancement Board funding for watershed council operation and private land restoration may remain relatively stable, board revenue has recently declined and the federal investments that support private contractors are likely to decline both on the South Coast and elsewhere. South Coast leaders could consider diversifying their funding to mitigate the effects of this decline by

- *Investing in the development and marketing of restoration byproducts.* County commissioners, watershed councils, and forest products businesses are interested in biomass utilization to help support restoration and create jobs on the South Coast. The onset of sudden oak death throughout the South Coast also provides a potential source of biomass. Although the region's remote location may pose feasibility challenges, the emergence of small-scale facilities that integrate value-added wood products and energy production in other remote counties in Oregon, such as Wallowa County, could be instructive.
- *Collectively raising their abilities to tell their story to a range of audiences*. Watershed councils tend to have strong capacity for managing state grants, working with landowners, and accomplishing on-the-ground projects, but may have less practice with explaining their work in ways that spark the imagination of funders who may not be familiar with restoration work.
- *Expanding outreach to private foundations.* Although some foundations such as the Meyer Memorial Trust have supported restoration, many are not aware of the importance of this work and its potential to produce multiple economic and ecological benefits.
- *Elevating the profile and general visibility of restoration work.* For example, one Curry County company installed an educational display about their services in the lobby of a local bank. Watershed councils and the Coquille Tribe have offered public talks and tours showing their work.
- *Quantifying environmental gains.* The Willamette Partnership, in conjunction with the regulator and conservation community, has developed environmental accounting protocols that quantify the ecological uplift of restoration projects, such as temperature benefit from riparian planting, nutrient reductions from buffer strips, and salmon values increased through habitat restoration. This can provide a new degree of accountability to funders.
- *Create and build the capacity to provide required environmental services.* The Upper Deschutes Watershed Council and the Deschutes River Conservancy have developed the capacity to provide federal National Environmental Policy Act, Endangered Species Act, and other required documentation. This capacity could be developed in the South Coast to create access to additional opportunities in an area with significant federal land management. On the private land side, The Freshwater Trust has developed a project management software platform (StreamBank™), tested in the South Coast, that streamlines permitting and funding for local restoration contractors.

Seek projects through partnerships

South Coast leaders may want to focus on implementing larger-scale restoration projects with multiple partners. Such projects can leverage many economic and ecological benefits. Partner-heavy projects often address high-priority or high-profile landscapes, species, or needs, and may cover more miles of stream or acres of land. Increasingly, watershed councils and others that have accomplished smaller and easier work are moving into more complex and larger projects, so experience with these multipartner models will help increase their capacity to tackle complex restoration needs. In addition, more partners typically bring more and different resources to a project. This may help reduce reliance on a few sources of funding, and could link the South Coast to new funding entities and partners for future work. Finally, larger projects have the potential to restore ecological function across a larger landscape and often across landownerships. For example, the restoration of the Ni-les'tun Tidal Marsh in the Bandon Marsh National Wildlife Refuge united thirty-nine partners to double the size of existing tidal marsh habitat in the Coquille River estuary.

South Coast leaders could help plan these larger projects to generate a package of work opportunities that match local contractor capacities. This may allow a greater range of businesses and organizations to benefit from restoration work, and could prevent smaller or less networked contractors from becoming marginalized. Larger projects might also help raise the overall profile of restoration work and the South Coast in the region and state. However, these projects can be complex to administer and implement. Partners might also bring varying expectations and commitments to the table, so these projects may necessitate strong leadership to ensure satisfactory outcomes.

Help contractors consistently connect to opportunities

A "one-stop shop" for connecting local contractors to work opportunities could help ensure that contractors are not missing chances to bid, and that they can find contracts that match their size and capacity. A partner within the network, such as a watershed council or the Wild Rivers Coast Alliance, could create and house such a database. It would serve two primary purposes:

- *Make available a comprehensive contact list* that includes contractor contact information, skills and work interest, and available equipment. This could be made available in a similar format to online resources such as the Oregon Forest Industry Directory (www.orforestdirectory.com), or provided in print to all of the local restoration organizations, agencies, and private landowners. The StreamBank™ platform could help facilitate this.
- *Offer a repository for watershed councils and others to post work opportunities*. This could reduce the time that contractors spend searching many websites and sources.

Helping local contractors maintain and continue to develop their skills could also help them to better access restoration work opportunities. It can be difficult for contractors working in a relatively isolated area on the coast to access training and resources. Past trainings on erosion control that the Curry Watersheds partnership has offered have been well attended, but there are currently limited funds to support further trainings. Partnerships with Southwestern Oregon Community College and other institutions might help secure the resources and capacity necessary to host more trainings on the South Coast.

Track and learn from the economic impacts of restoration

Monitoring and sharing the economic impacts of restoration may help build new capacity and attract further investments to the South Coast. Local leaders may benefit from sharing evidence of these valuable impacts to current and potential funders to boost their accomplishments. Exposing decision-makers to this information may also help them better understand the importance of supporting natural resource management agencies and programs. Furthermore, local stakeholders could learn from this monitoring, and adjust their restoration work to increase its impacts.

Although there are many established protocols and data sources for ecological monitoring, economic monitoring methods are less well developed. The Ecosystem Workforce Program has a quick guide[33] that may help South Coast leaders implement economic monitoring through the following steps:

1) Identify priority outcomes and goals during their action planning process
2) Develop a set of metrics to track progress toward these goals across the South Coast, and/or to document the impacts of specific projects
3) Create a plan for collecting and analyzing monitoring data
4) Disseminate and learn from results

Potential metrics might include measures of job creation, local capture, or job quality (see Table 7 on page 36). Data sources for these metrics would depend on where restoration work is conducted (e.g., federal or private lands) and can include federal databases, watershed council records, government agency staff members, or contractor surveys. Details on using these sources can be found in the monitoring quick guide.

South Coast leaders may choose to measure the economic impacts of restoration at project and watershed scales, and compile and compare these data. This approach could allow watershed councils and other entities to understand the local effects of their work. It could also create a broader picture of these impacts, which could help leaders track progress toward any goals they may have set out in a South Coast restoration action plan.

Table 7 Sample monitoring measures for monitoring the economic impacts of restoration

What you want to know (indicators)	Measures to use	Data sources
Contracting and local capture		
Quantity and type of work offered: ▪ By you if you are a project manager, or ▪ By the agency whose work you are monitoring	▪ Total number and dollar value of contracts ▪ Number of contracts offered organized by work type ▪ Dollar value of contracts organized by work type	Contract records and/or federal databases
How contracts and dollars are distributed among contracting firms	▪ Number of firms receiving contracts and total amount for each firm	Contract records and/or federal databases
If local firms are capturing work	▪ Percentage of contract and agreement dollars captured by local firms	Contract records and/or federal databases
Jobs and local capture		
Job creation and retention	▪ Number of jobs supported by restoration work ▪ Total worker hours supported by restoration ▪ Total wages ▪ Average wage per worker	Contractor surveys
How many workers are local	▪ Percentage and number of workers that are local	Contractor surveys
Job quality		
Benefits	▪ Percentage of workers receiving benefits or payments in-lieu of benefits	Contractor surveys
Worker safety	▪ Percentage and number of contracts without job-related injuries or illness that result in lost work time	Contractor surveys
Opportunities for learning and advancement	▪ Percentage of contracts with on-the-job training	Contractor surveys
Subcontracting and purchases		
Contributions to the local subcontracting market	▪ Percentage and number of subcontractors that are local	Contractor surveys

Appendix A

Research approach

Data Sources

We collected data on restoration investments on the South Coast between 2001 and 2010 from four separate databases: the Federal Procurement Data System (FPDS), USAspending.gov, the Oregon Watershed Enhancement Board Grant Management System (OGMS), and the Oregon Watershed Enhancement Board's (OWEB) Oregon Watershed Restoration Inventory (OWRI).

FPDS is a publicly accessible centralized database for federal contracts. USAspending.gov provides similar access to information about federal grants, agreements, and direct payments. We combined the FPDS and USAspending.gov data for Coos and Curry counties for the following land management and environmental agencies into one database:

- Bureau of Land Management
- Bureau of Reclamation
- Environmental Protection Agency
- Farm Service Agency
- National Oceanic and Atmospheric Administration
- Natural Resources Conservation Service
- United States Forest Service
- United States Fish and Wildlife Service

We coded individual federal awards so they could be sorted by award type (contract, grant, agreement, direct payment), funding amount, fiscal year (2001–10), funding agency, place of performance, recipient location, government program or product service code, and project description. We included contracts with product service codes related to natural resources and conservation, construction and maintenance of roads and facilities, and special studies and analyses for environmental assessments including wildlife and plant studies. We also looked at spending in six federal direct-payment programs:

- CRP Conservation Reserve Program
- CSP Conservation Stewardship Program
- EQIP Environmental Quality Improvement Program
- FIP Forestry Incentive Program
- GRP Grassland Reserve Program
- WHIP Wildlife Habitat Incentive Program

For state data, we used OWRI, which is an inventory of restoration data for the State of Oregon managed by OWEB. OWRI was established in 1995 to track detailed information about restoration projects funded by OWEB and completed through the Oregon Plan for Salmon and Watersheds. It also includes voluntarily reported information about other restoration investments that landowners and federal, state, and local groups make with funds from sources other than OWEB (e.g., private industrial forest landowners, watershed councils, counties). We used OWRI to track and analyze non-OWEB restoration investments, which we refer to as additional restoration investments. While OWRI contains data for completed projects only, OGMS includes data for OWEB-funded projects that are both open and complete. Therefore, we used OGMS data to track and analyze South Coast OWEB grants for projects started at any time from 2001 to 2010.

To obtain further information on the impacts of restoration work from local perspectives, we conducted eight interviews with fifteen individuals from watershed councils, the Coquille Tribe, and contracting businesses. We used this information to describe the local contracting sector and identify gaps in local contracting capacity. Further, we created five profiles based on our interviews with local contractors.

Local capture of restoration investments

We used federal data on contractor location to analyze local and regional capture of federal contract work. We defined local capture as work performed by South Coast contractors from Bandon, Myrtle Point, Coquille, Port Orford, Gold Beach, and Brookings and surrounding smaller communities (Curry County and the Coquille watershed); and regional capture as work performed by contractors from the extent of Coos County beyond the South Coast (outside of the Coquille watershed), and counties adjacent to the study area: Douglas, Josephine, and Jackson in Oregon; and Del Norte County in northern California. Jackson County, Oregon, is not directly adjacent to the South Coast, but is home to a high density of natural resource contractors and is

an important source of regional restoration capacity.

Since 35 percent of federally funded projects in Coos County did not list exact place of performance by name or ZIP code, we could not accurately distinguish if these projects took place in the Coquille watershed. To address this, we estimated an upper, lower, and mean estimate of federal investment in the Coquille watershed using the average proportions of the Coquille watershed investments in Coos County from 2006 to 2010 (90 percent confidence interval, mean 32 percent, 21–43 percent). This provides a range of possible amounts of total federal investment in restoration on the South Coast (Figure 12).

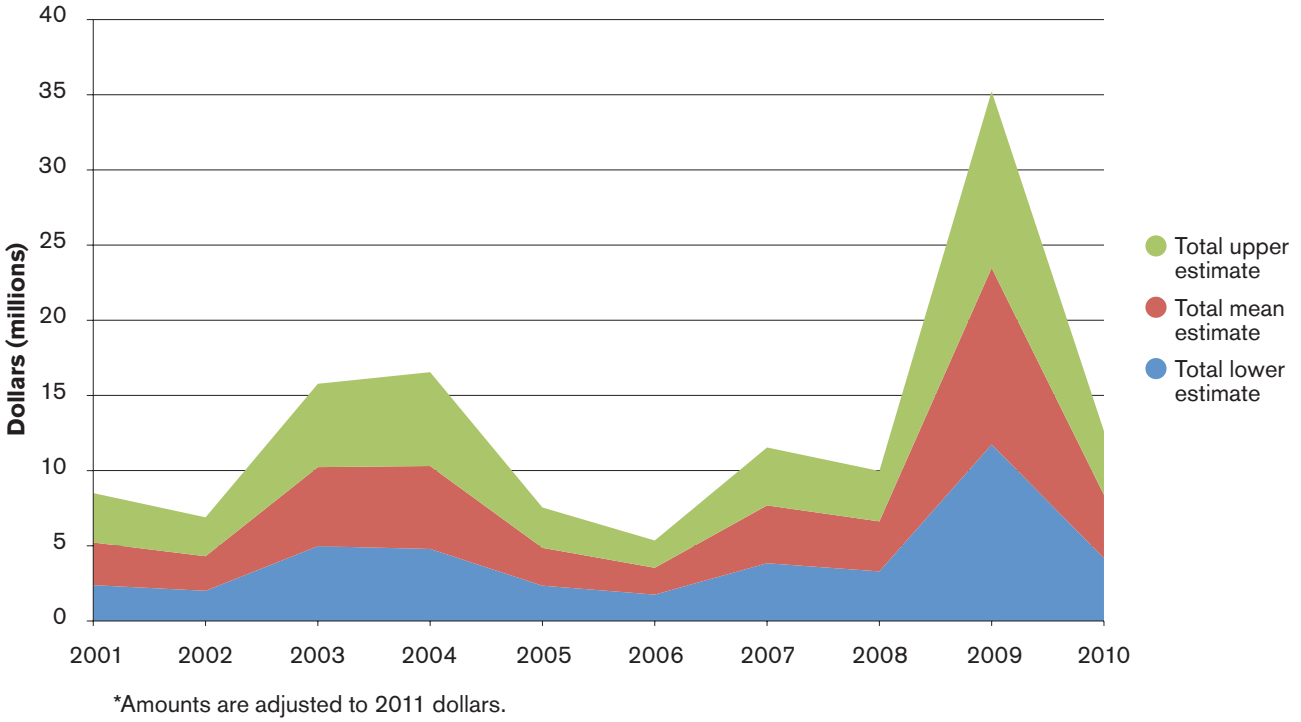
Estimating economic impacts of restoration funding

We used economic multipliers developed by the Ecosystem Workforce Program at the University of Oregon to estimate the statewide economic impacts of restoration work completed on the South Coast.[34] Economic multipliers measure the impact of spending on a local economy. These multipliers use input-output models to describe patterns of trade and the degree to which goods and services are sold and purchased outside of this economy.

We report on the following economic impacts:

- *Direct effects* are created by the planning and implementation of restoration projects. These include, for example, the jobs and wages of businesses that perform restoration work, or watershed councils that plan and coordinate projects.
- *Indirect effects* result from purchases of materials, supplies, equipment, and other services needed to implement projects as well as household spending of worker earnings.
- Total economic output is the sum total value of all goods and services resulting from a production process. It includes the value of all goods and services produced during restoration project planning and implementation, through purchasing of materials and supplies needed to conduct restoration activities, and when workers involved in restoration spend their earnings on housing, utilities, food, and other consumer goods and services.

Figure 12 Total federal restoration investment*



*Amounts are adjusted to 2011 dollars.

Appendix B

Initial list of South Coast businesses engaged in forest and watershed restoration

The following is drawn from the Federal Procurement Data System as well as lists that the watershed councils keep of potential contractors. This list is likely incomplete and is meant to provide examples of some of the types of businesses engaged in forest and watershed restoration on the South Coast.

Contractor Name	City	County
Agness Company	Agness	Curry
Alan Haga	Bandon	Coos
Big Bear Logging and Fire Suppression	Coquille	Coos
Budget Tree Service LLC	Gold Beach	Curry
Charlie Valentine	Langlois	Curry
Chris Massingill	Monroe	Lane
Duane Rath Excavating	Gold Beach	Curry
Edson Creek Rock	Wedderburn	Curry
Fletcher Backhoe	Gold Beach	Curry
Flora Pacifica Inc.	Brookings	Curry
Fortune Bulldozing and Grading	Coquille	Coos
Freeman Rock Enterprises Inc.	Brookings	Curry
Hildebrand Ranches	Langlois	Curry
Houshour Inc.	Myrtle Point	Coos
Jake Lang	Sixes	Curry
James Crook	Brookings	Curry
Jarvis Roads LLC	Myrtle Point	Coos
John S. Rapreager Inc.	Brookings	Curry
John Williams Construction	Coquille	Coos
Lee Valley Rock Products	Myrtle Point	Coos
Leo Grandmontagne	Myrtle Point	Coos
Lyle Dishner	Gold Beach	Curry
Marsh Excavation	Port Orford	Curry
Messerle and Sons	Coos Bay	Coos
Michael Hewitt	Port Orford	Curry
Patti McKenzie	Port Orford	Curry
Pete Bussman	Sixes	Curry
Pizzola and Sons Construction	Coquille	Coos
Production Crushers	Brookings	Curry
R and K Excavation Company LLC	Bandon	Coos
Ringer Construction and Trucking Inc.	Gold Beach	Curry
Small Change Forestworks	Gold Beach	Curry
Swanson Ecological Services LLC	Gold Beach	Curry

Contractor Name	City	County
Tidewater Contractors Inc.	Brookings	Curry
TJB Enterprises	Myrtle Point	Coos
Tommy Elam	Powers	Coos
Torres Contracting Inc.	Myrtle Point	Coos
Wahl Ranches LLC	Langlois	Curry
Woodland Forestry Inc.	Coquille	Coos
Zuber and Sons Logging LLC	Gold Beach	Curry

Endnotes

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31 See ewp.uoregon.edu/resources/workforce-qualityjobs/ for a quick guide to conducting a workforce assessment and examples of completed assessments.

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