

Restoring Oregon Coast Coho Salmon What is Your Opinion?



Coho Salmon, Photo: BLM of Oregon and Washington



**Oregon State University – Survey Research Center
239 Weniger Hall – Corvallis, OR 97331**

V20

AGENDA ITEM A
Attachment 34
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This survey is intended to help researchers understand public opinion about Oregon Coast Coho salmon.

Q1: Do you currently live or have you previously lived along the Oregon Coast?

(Mark one circle next to your answer.)

- ₁ Yes, I currently live along Oregon coast
- ₂ Yes, I have lived along Oregon Coast in the past
- ₃ No
- ₄ Not sure

→ **Q1a: Have you ever visited the Oregon coast?**

- ₁ Yes, I have visited Oregon coast
- ₂ No, I have not visited Oregon coast
- ₃ Not sure



The **Oregon Coast Coho salmon** (*Oncorhynchus kisutch*) is a fish species protected as threatened under the U.S. Endangered Species Act. According to the act:

A **threatened species** is a plant or animal species that is at risk of becoming endangered.

An **endangered species** is a plant or animal species that is in danger of going extinct.

Across the United States, there are roughly 700 animal species (including mammals, birds, fishes, amphibians and invertebrates) and 900 plant species currently listed as threatened or endangered under the Endangered Species Act.

The Endangered Species Act requires the federal government to take reasonable actions to protect both endangered and threatened species, such as restricting their harvest and protecting their habitat in places where they live.

Q2: Before today, have you ever heard about the Endangered Species Act (ESA)?

- ₁ Yes, I have heard of it
- ₂ No, I have not heard of it
- ₃ Not sure

People are interested in taking action to protect endangered or threatened species for a variety of reasons that may include:

- Species are a source of recreation, enjoyment and learning for people now and in the future.
- Species help to maintain a healthy ecosystem and should not be endangered by human actions.
- Species may be culturally and economically important to tribal and indigenous peoples.

People are concerned about taking action to protect endangered or threatened species for a variety of reasons that may include:

- There may be restrictions placed on what people can do, including limits on recreation, land development, and agricultural and forestry activities.
- There may be an increase in the cost of producing products such as food, lumber, electricity, housing, and transportation, which may increase the prices consumers pay.
- Protecting endangered and threatened species diverts government funding away from other important uses.

In 2014, federal and state governments spent over \$1.2 billion on activities to protect 1,356 endangered and threatened animals and plants.

Q3: How much do you agree or disagree with the three (3) following statements?

a. Protecting threatened species is important to me.

- ₁ Strongly Agree ₂ Somewhat Agree ₃ Neither Agree nor Disagree ₄ Somewhat Disagree ₅ Strongly Disagree ₆ Not sure

b. Protecting endangered species is important to me.

- ₁ Strongly Agree ₂ Somewhat Agree ₃ Neither Agree nor Disagree ₄ Somewhat Disagree ₅ Strongly Disagree ₆ Not sure

c. When protecting threatened and endangered species, it is important to minimize effects on human activities.

- ₁ Strongly Agree ₂ Somewhat Agree ₃ Neither Agree nor Disagree ₄ Somewhat Disagree ₅ Strongly Disagree ₆ Not sure

Pacific Salmon and Steelhead

Pacific salmon and steelhead are fish species that are born in freshwater rivers and lakes, migrate to the Pacific Ocean, and return several years later to the river where they were born to reproduce.



All photos by NOAA Fisheries

Major species of Pacific salmon and steelhead include Chinook, Chum, Pink, Sockeye, and Coho. Each of these species may be grouped into several **populations**, which are groups of individual fish of the same species living in the same place at a certain time.

There are 28 different populations of salmon and steelhead that are listed as threatened or endangered under the Endangered Species Act (ESA). There are 24 other populations of salmon and steelhead that are not listed under the ESA.

Q4: Before today, have you ever seen, heard, or read about any species of Pacific salmon?

- 1 Yes
- 2 No
- 3 Not sure

Coho Salmon Populations

Some Coho salmon populations protected by the ESA include Coho that migrate to inland Oregon and Washington, and two populations in California.

Other Coho salmon in the United States that are not listed under the ESA include three populations in Washington.

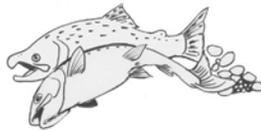
Coho salmon are a popular fish to catch in both the ocean and freshwater streams and lakes.

Coho salmon are fished commercially, and regularly sold in restaurants and grocery stores.



Q5: Have you ever made a recreational fishing trip targeting any species of Pacific salmon or steelhead?

- ₁ Yes
- ₂ No
- ₃ Not sure



Oregon Coast Coho Salmon

These Coho are born in freshwater rivers along the Oregon Coast, migrate to the Pacific Ocean, and return several years later to their home stream to reproduce.

Coho salmon survival is greatly affected by ocean conditions. During poor conditions, as few as 1% of fish survive to return to their home streams. During favorable conditions, as many as 15% of fish return.

Q6: Before today, have you seen, heard, or read about Coho salmon?

- ₁ Yes
- ₂ No
- ₃ Not sure

Oregon Coast Coho Salmon Population and Threats

- The State of Oregon has found that historical (pre-development) Coho salmon numbered between 1 and 2 million fish.
- In contrast, the State of Oregon has found that recent Coho salmon runs have ranged from a low of 23,000 fish in 1997 to a high of 360,000 fish in 2014. During the most recently measured year, there were 57,000 fish returning in 2015.
- Oregon Coast Coho have lost habitat, the places where Coho salmon find food, shelter, and spawning mates. Due to low population numbers and lost habitat, Oregon Coast Coho are listed as threatened under the ESA.

Biologists have identified that the following threats are of high concern to the survival of the Oregon Coast Coho. All listed threats concern the species' habitat.

- Human activities, such as constructed barriers (dikes and tide gates) in estuaries and large pipes (culverts) in streams.
- Streams and rivers lack large wood, pools, and connections to side channels that provide cover for juvenile Coho salmon.
- Water quality problems, including high water temperatures, pollutants and sediment in streams.

Biologists have identified that the following threats are of low concern.

- Overharvest from commercial and recreational fishing (limits on catch are currently in place).
- Coho hatchery operations on the Oregon Coast (most have been eliminated).

Q7: After reading the information about the population and its threats, how concerned are you, if at all, about Oregon Coast Coho salmon?

- ₁ Very concerned
 ₂ Somewhat concerned
 ₃ Not that concerned
 ₄ Not at all concerned
 ₅ Not sure

New Restoration Actions for Oregon Coast Coho Salmon

The State of Oregon and the U.S. government have used the best available science to develop new restoration actions to help Oregon Coast Coho salmon. Broad goals of restoration are:

- “Recover” Oregon Coast Coho, meaning that the species’ habitat and population increases enough so that it can be removed from the ESA list of threatened species.
- Increase the number of fish returning to Oregon coastal rivers (abundance), while recognizing that fewer fish will return when ocean conditions are poor and more fish will return when ocean conditions are good.
- The time-frame for reaching the desired abundance of salmon is about 50 years.
- Allow freshwater recreation fishing every year for wild Oregon Coast Coho if abundance is strong.

Q8: How important, if at all, are each of the following restoration actions to you?

	Very Important ↓	Somewhat Important ↓	Not Important ↓	Not Sure ↓
“Recover” Oregon Coast Coho	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄
Increase the number of fish as much as possible	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄
Recover abundance within 50 years	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄
Allow recreational fishing every year	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄

Current Status for Oregon Coast Coho Salmon

The State of Oregon and the U.S. government both stress that Oregon Coast Coho salmon populations are currently far below desirable levels. In particular:

Abundance of salmon

- Since 1994, the State of Oregon finds that the number of Coho returning each year is on average 150,000 fish, which is approximately 30% of the abundance level that could occur under the government's most optimistic restoration scenario.
- The U.S. government finds that stream habitat for Coho is not improving.

Recreational fishing

- There is a very limited recreational freshwater fishery for wild Oregon Coast Coho salmon. Fishing is periodically closed when the numbers of returning fish are low. For example, the fishery was closed in 2016 because there were too few fish.
- When open, recreational fishermen are allowed to fish for wild Coho salmon during a short period of a few weeks and to keep 5 fish per year.
- In contrast, recreational fisheries for other salmon and steelhead species that are not listed under the Endangered Species Act are open every year and allow fishers to keep 10 fish per year for wild Chinook salmon on the northern Oregon Coast and 20 fish per year for other salmon species. This policy depends on river and species conditions.

Q9: Have you personally gone fishing for any species of salmon in Oregon in the last year?

- ₁ Yes, have fished for salmon in Oregon in last year
- ₂ No, have not fished for salmon in Oregon in last year → SKIP TO NEXT PAGE
- ₃ Not sure → SKIP TO NEXT PAGE

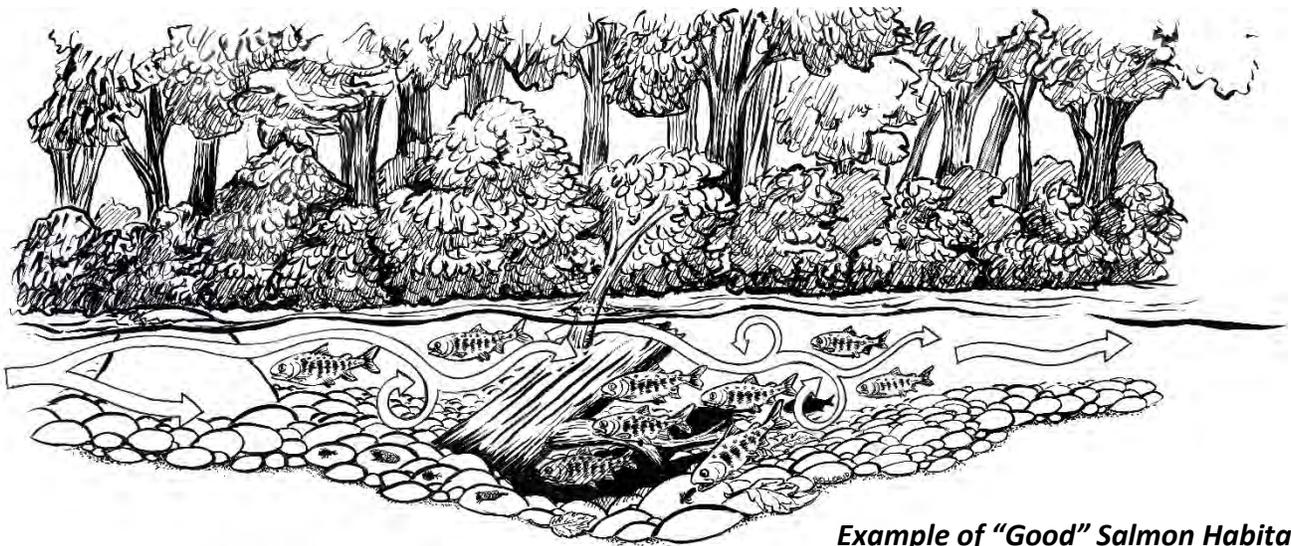
→ **Q9a: How many fishing trips have you made targeting salmon in Oregon during the past year?**

- ₁ 1 – 3 trips
- ₂ 4 – 6 trips
- ₃ 7 – 9 trips
- ₄ 10 – 12 trips
- ₅ 13 – 15 trips
- ₆ 16 trips or more
- ₇ Not sure

New Habitat Restoration Actions for Oregon Coast Coho

To help Oregon Coast Coho salmon, the U.S. government, the State of Oregon, and private conservation groups are considering numerous actions to restore habitat in estuaries and freshwater rivers and streams along the Oregon Coast. Only 28% of the habitat needed for young salmon is currently available. These following restoration actions are proposed:

- Increase Coho habitat and fish passage by removing constructed barriers in estuaries.
- Conduct wetland planting projects to increase streamside vegetation and shade.
- Increase large wood, boulders, or other beneficial structures in streams.
- Develop strategies to reduce water pollution in estuaries and streams.



Example of "Good" Salmon Habitat

These actions do not come without costs, which include the following:

- Coho salmon streams flow through privately owned forest and agricultural lands and payments are made to landowners who voluntarily adopt conservation actions on their land.
- Conservation staff to support restoration activities must be paid.

If habitat restoration actions are taken for Oregon Coast Coho salmon, it will cost every household more money.

- Your household's annual federal or state taxes will increase, and you may pay higher prices for lumber and agricultural products.
- The increase in annual taxes and prices is expected to last for a period of 10 years while the primary restoration activities take place.

Q10: How much do you agree or disagree with the following statement?

Even if it costs us more money, we should do more so that the Oregon Coast Coho salmon recovers.

- ₁ Strongly Agree ₂ Somewhat Agree ₃ Neither Agree nor Disagree ₄ Somewhat Disagree ₅ Strongly Disagree ₆ Not sure

Oregon Coast Coho Population over Time

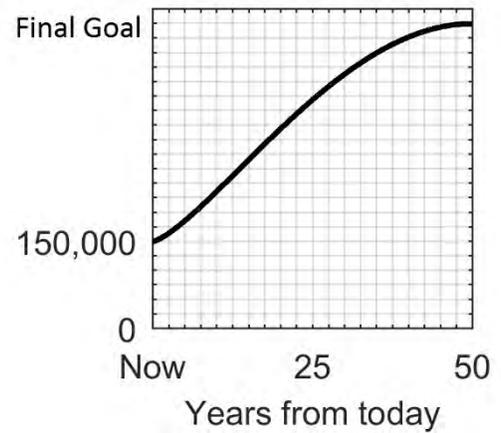
Depending on how restoration activities are done, the change in the population size of Oregon Coast Coho salmon may be **quick** or **slow**.

Quick Change

If habitat is restored in the immediate future, Coho salmon population will rise **quicker**.

A **Quick Change** could mean starting at today's population size of an average of **150,000 fish**, then increase abundance to a **Final Goal** in 50 years. There would be about a **65%** increase in the population in the first 25 years.

Example of Quick Change

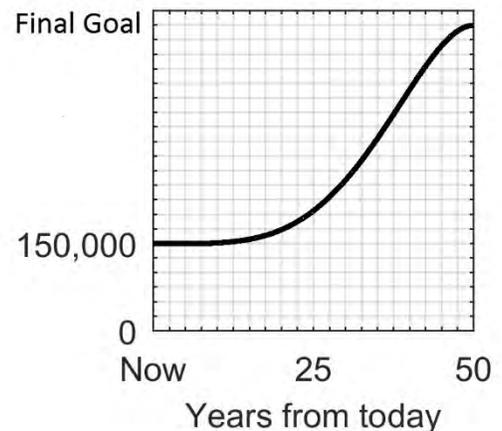


Slow Change

If habitat is restored more gradually, Coho salmon population will rise **slower**.

A **Slow Change** could mean starting at today's population size of an average of **150,000 fish**, then increase abundance to a **Final Goal** in 50 years. There would be about a **15%** increase in the population in the first 25 years.

Example of Slow Change



Q11: How much do you agree or disagree with the following statement?

Even if it costs us more money, we should try for a **quick change** rather than a **slow change** in Oregon Coast Coho salmon.

- ₁ Strongly Agree ₂ Somewhat Agree ₃ Neither Agree nor Disagree ₄ Somewhat Disagree ₅ Strongly Disagree ₆ Not sure

Which Restoration Alternatives Do You Prefer?



Coho Salmon, Photo: BLM of Oregon and Washington

There are multiple habitat restoration alternatives available to protect Oregon Coast Coho salmon. Your opinions are important to help understand what habitat restoration alternatives the public prefers.

The **next three (3) questions, Q12, Q13, and Q14**, compare the expected results over a 50 year period under different habitat restoration activities and levels of government monitoring. In each question you are asked to choose between a Status Quo (leave as is) and two other alternatives (A and B):

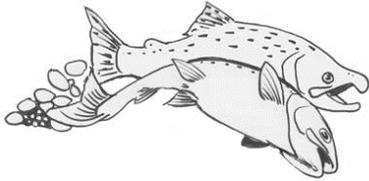
- The Status Quo Alternative (leave as is) shows expected results over the next 50 years if no new Coho salmon habitat restoration occurs, and would not increase the costs to your household.
- Alternatives A and B show the expected results over the next 50 years under two of the many possible habitat restoration activities that do more and cost more to protect Oregon Coast Coho salmon. The added cost to your household each year for 10 years is shown for each alternative.

Please treat each of the following questions (Q12, Q13, Q14) individually as a separate choice.

Remember, if you spend money for this restoration activity, it won't be available to buy other things.

Q12: Alternative A and B are potential restoration projects to improve habitat for Oregon Coast Coho salmon. The Status quo alternative means no new restoration occurs. Given the choice between these three alternatives, which one would you prefer?

(Please mark you answer below)



	Results in 50 years		
	Status Quo	Alternative A	Alternative B
Population Status	Threatened	Recovered	Threatened
Population Size	150,000 fish	375,000 fish	250,000 fish
Population over Time	<p>No Change</p>	<p>Slow Change</p>	<p>Quick Change</p>
Recreational Fishing (# of fish that can be kept)	Periodically Closed 5 fish/year	Open Every Year 10 fish/year	Open Every Year 5 fish/year
Added cost to your household each year for <u>10 years</u>	\$0	\$250/year	\$10/year

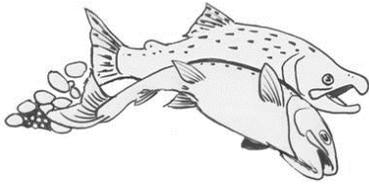
Which alternative do you prefer?
(Choose One)

₁
Status Quo

₂
Alternative A

₃
Alternative B

**Q13: Here again, Alternative A and B are potential restoration projects to improve habitat for Oregon Coast Coho salmon. The Status quo alternative means no new restoration occurs. Given the choice between these three alternatives, which one would you prefer?
(Please mark you answer below)**



	Results in 50 years		
	Status Quo	Alternative A	Alternative B
Population Status	Threatened	Recovered	Recovered
Population Size	150,000 fish	325,000 fish	375,000 fish
Population over Time	<p>No Change</p>	<p>Slow Change</p>	<p>Quick Change</p>
Recreational Fishing (# of fish that can be kept)	Periodically Closed 5 fish/year	Open Every Year 10 fish/year	Open Every Year 5 fish/year
Added cost to your household each year for <u>10 years</u>	\$0	\$150/year	\$250/year

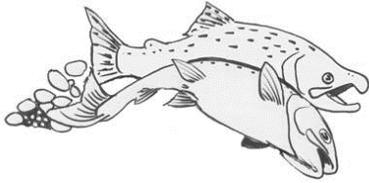
Which alternative do you prefer?
(Choose One)

₁
Status Quo

₂
Alternative A

₃
Alternative B

**Q14: Here again, Alternative A and B are potential restoration projects to improve habitat for Oregon Coast Coho salmon. The Status quo alternative means no new restoration occurs. Given the choice between these three alternatives, which one would you prefer?
(Please mark you answer below)**



	Results in 50 years		
	Status Quo	Alternative A	Alternative B
Population Status	Threatened	Recovered	Recovered
Population Size	150,000 fish	525,000 fish	325,000 fish
Population over Time	<p>No Change</p>	<p>Slow Change</p>	<p>Slow Change</p>
Recreational Fishing (# of fish that can be kept)	Periodically Closed 5 fish/year	Open Every Year 5 fish/year	Open Every Year 5 fish/year
Added cost to your household each year for <u>10 years</u>	\$0	\$250/year	\$75/year

Which alternative do you prefer?
(Choose One)

₁ ₂ ₃
 Status Quo Alternative A Alternative B

About your Choices

Q15: Questions Q12, Q13, and Q14 were asked to help researchers better understand public opinion about conservation and restoration of Oregon Coast Coho salmon habitat. People may feel confident, or not so confident, in their answers and the costs they would have to pay.

How confident are you about the answers you gave to questions Q12, Q13, and Q14?

- ₁ Extremely confident
 ₂ Very confident
 ₃ Somewhat confident
 ₄ Slightly confident
 ₅ Not at all confident
 ₆ Not sure

Q16: We would like to understand what factors may or may not have influenced your responses to questions Q12, Q13, and Q14. Below is a list of statements people have made in similar surveys about why they responded as they did.

How much do you agree or disagree with each of the following statements?

	Strongly Agree ↓	Somewhat Agree ↓	Neither Agree nor Disagree ↓	Somewhat Disagree ↓	Strongly Disagree ↓	Not sure ↓
I had enough information to make an informed choice.	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅	<input type="radio"/> ₆
I do not trust the government to restore Coho salmon.	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅	<input type="radio"/> ₆
I did not consider selecting the Status Quo alternative in making my choice in Q12, Q13, or Q14.	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅	<input type="radio"/> ₆
I do not believe the government should fund habitat restoration activities.	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅	<input type="radio"/> ₆
If applied, I do not think the proposed conservation actions will restore Coho salmon.	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅	<input type="radio"/> ₆
The added cost I am willing to pay is to protect the environment in general and not just to protect Coho salmon.	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅	<input type="radio"/> ₆

How do you view money today versus money in the future?

Investing in habitat restoration of Coho salmon today will help increase the Coho salmon population in future years. To better understand your preferences for receiving benefits today versus benefits in the future, consider the following situation:

Suppose your household was given the option between receiving a \$100 tax-free payment now (mailed to your address today) or a larger tax-free payment mailed to your address twelve (12) months from now. The payment mailed twelve months from now is higher to compensate you for waiting. You can only receive one of the two payment options, which are guaranteed.

Q17: What is the minimum amount of money that you would accept 12 months from now instead of getting a \$100 check today? (Please select the minimum amount.)

\$102	\$104	\$106	\$108	\$110	\$112	\$114
\$116	\$118	\$120	\$130	\$140	\$150	\$160
More than \$160						

About You and Your Household

IMPORTANT: Your individual responses to all questions in this survey will be kept confidential and separate from your household address. We do not have names of individuals that live in your household. Material linking your address to your survey responses will not be released and will be destroyed at the end of the study.

Q18: Do you identify as male or female? Male Female

Q19: In what year were you born? YEAR BORN: _____
YYYY

Q20: How many people, including yourself, currently live in your household? _____ PEOPLE

Q21: What is the highest grade or level of school you have completed?

- | | | |
|--|---|---|
| <input type="radio"/> ₁ Some High School or less | <input type="radio"/> ₄ Associate's degree\Tech school | <input type="radio"/> ₇ Doctorate degree |
| <input type="radio"/> ₂ High School diploma / GED | <input type="radio"/> ₅ Bachelor's degree | <input type="radio"/> ₈ Other |
| <input type="radio"/> ₃ Some College | <input type="radio"/> ₆ Master's degree | (describe _____) |

Q22: Are you of Hispanic, Latino, or Spanish origin?

- ₁ Yes ₂ No

Q23: Which of the following best describes your race or origin? (You may mark more than one box.)

- ₁ Asian ₄ Native Hawaiian or other Pacific Islander
₂ American Indian or Alaska Native ₅ White
₃ African American or Black ₆ Other race or origin (describe _____)

Q24. What was your household income (before taxes) in 2016?

- ₁ Less than \$10,000 ₅ \$40,000 to \$49,999 ₉ \$100,000 to \$124,999
₂ \$10,000 to \$19,999 ₆ \$50,000 to \$59,999 ₁₀ \$125,000 to \$149,999
₃ \$20,000 to \$29,999 ₇ \$60,000 to \$79,999 ₁₁ \$150,000 to \$199,999
₄ \$30,000 to \$39,999 ₈ \$80,000 to \$99,999 ₁₂ \$200,000 or more

Q25: What is your employment status?

- ₁ Employed full time ₄ Currently unemployed
₂ Employed part time ₅ Student
₃ Homemaker or stay-at-home parent ₆ Retired
₇ Other (describe _____)

Q26: Did we overlook anything? Would you like to make a comment? Please use the space below.



Thank you for your help! Please return your survey in the postage-paid envelope enclosed in the survey packet you received.

Oregon State University Survey Research Center
239 Weniger Hall
Corvallis, OR 97331-8579