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What do Environmental and Resource Economists Think? Results from a Survey of AERE Members[1]

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What do Environmental and Resource Economists Think?

Results from a Survey of AERE Members

Abstract. In this paper we present results from an opinion survey of members of the Association of Environmental and Resource Economists concerning issues ranging from basic market failure propositions to current policy questions to environmental attitudes. The topical issues considered span the discipline including pollution, growth and sustainability, fishery, forestry and energy economics. We use entropy analysis to assess the degree to which there is a consensus among AERE members on particular issues and a multivariate analysis to determine whether differences are predictable by observable characteristics. We find that AERE members have reached consensus on many of the issues but there are a few key areas where this is not the case. The multivariate analysis of survey responses indicates that observable factors help explain opinions including the level of concern about the environment and natural resources, ideology and individual characteristics.

JEL: Q0, Q1, Q2, Q3, Q4, Q5

Introduction

Are environmental and resource economists "one-handed"? In other words, are they able to provide consensus opinion on environmental issues without saying, as the economist joke goes, "on the other hand"? In order to provide an initial answer to this question we conducted a survey of Association of Environmental and Resource Economists (AERE) members in which we ask for opinions on a number of environmental and natural resource economic issues. These issues range from basic statements about market failure to current policy questions to environmental attitudes. Such surveys are important to the extent that they clarify the opinions of environmental and resource economists, determine which issues such economists agree and disagree on and to inform non-economists as to the degree to which consensus exists in the profession. The idea to conduct surveys of economists is not new. A lnumber of papers present the views of surveyed economists but the coverage of environmental and natural resource issues is scant. The first such survey may be Bell (1945) who, along with an American Economic Association (AEA) committee, asked AEA members to "indicate which … government activities you consider appropriate or suitable postwar functions of government and which ones you do not favor." Of 43 potential government activities, only two dealt with environmental or natural resource problems.

Another early survey of economists was motivated by an editorial in *Business Week* that observed, following the 1977 meeting of AEA members, that the economics profession was more concerned with abstract models relative to economic policies of importance to society. Kearl et al. (1979) surveyed AEA members and find that there is more agreement on microeconomic issues relative to macroeconomic issues and more agreement on positive relative

to normative issues. In terms of environmental economic opinions, Kearl et al. find that 81% of their respondents agree that "effluent taxes represent a better approach to pollution control than imposition of pollution ceilings." Alston, Kearl and Vaughan (1992) conducted a similar survey of AEA members in 1990. They find that 79% agree that "pollution taxes or marketable pollution permits are a more economically efficient approach to pollution control than emission standards." In response to the statement "reducing the regulatory power of the Environmental Protection Agency (EPA) would improve the economic efficiency of the U.S. Economy," 36% agreed. Most recently, Fuller and Geide-Stevenson (2003) conducted another follow-up survey of AEA members. They find that 82% agree that "pollution taxes or marketable pollution permits are a more economically efficient approach to pollution control than emission standards" and 39% agree that "reducing the regulatory power of the Environmental Protection Agency (EPA) would improve the economic efficiency of the U.S. Economy."[2] Interest in the opinions of economists is still strong, including opinions toward environmental policies. A session at the 2013 Allied Social Science Association meetings titled "What do economists think about major public policy issues?" featured two papers, both presenting results from a survey of the Chicago

[2] The answer categories are agree, agree with provisions and disagree. Another follow-up survey was conducted by the same group of authors in 2011. These results have not yet appeared in the literature.

Economic Expert Panel (Gordon and Dahl 2013, Sapienza and Zingales 2013).[3]

In this paper we present results from a survey of AERE members. The purpose of this study is to fill a void in the literature given the scant attention to environmental and resource economic issues and thin coverage of environmental and resource economists in previous surveys. In short, we are interested in what environmental and resource economists think about environmental and resource economic issues. The issues considered span the discipline including pollution, growth and sustainability, fishery, forestry and energy economics. Our analysis considers univariate measures of agreement, entropy and consensus analysis and multivariate analysis of the determinants of opinions.

In the next section we describe the research methods used. We describe the survey and sample data, survey development and the topics of the questions. In the third section we describe the empirical methods. These include measures of consensus, beyond agreement or disagreement with the survey statements, and the regression analysis. In the fourth section we present the results. We organize the results according to statements about economic principles, policy, macroeconomics, sustainability and environmental attitudes. We further arrange the results into those that have high agreement and high consensus, high agreement but low consensus and low agreement and low consensus. Our concluding section summarizes the results and make

[3] Two questions about a carbon tax are included. Details on the economist panel and results of survey questions are available here: http://www.igmchicago.org/igm-economic-experts-panel.

suggestions for future research.

Methods

Sample

On September 26, 2012 we sent an email to 996 AERE members with a link to an internet survey using SurveyMonkey®. After a reminder email on October 8 and another on October 23 we received 405 responses, of which 352 completed the survey. After deleting 19 bounced email addresses, our response rate is 41% and completion rate is 36%.[4] The sample average years worked as an environmental economist is 12. About 5% of the sample are students or have not worked as an economist. In terms of work activities 98% of the working sample engages in research, 73% teach, 32% conduct policy, 23% have administrative duties and 6% engage in extension. Eighty-five percent of the sample reports that their field of study from *Journal of Economic Literature* (*JEL*) classification codes is environmental economics (Q5), 43% has a field of renewable resources and conservation (Q2), 30% are energy economists (Q4), 22% are agricultural economists (Q1), 16% have a field in nonrenewable resources and conservation (Q3) and 14% report their field as the Q0 general field of "Agricultural and Natural Resource

[4] These response rates are at the upper end of the response rates achieved in other surveys of economists. We offered a sweepstakes for a $50 Amazon.com gift card as an incentive. One-hundred ninety three respondents registered for the sweepstakes.

Economics; Environmental and Ecological Economics."

Seventy-eight percent of the sample works at an academic institution. Of these, 48% are at institutions with more than 20,000 students. Seventy percent of the academic respondents work in a department that offers the PhD degree. Twenty five percent of these departments are in agricultural colleges, 24% are in business schools, 19% are in colleges of arts and sciences, 17% are in colleges of social sciences and 15% are in colleges of environment and/or natural resources. Seventy-five percent of the sample have the doctoral degree. Seventy-two percent of the sample is male and 87% is white. The average age is 43. Average household size is 2.75 and the average number of children is 0.80. Eighty three percent reside in the United States. Fifteen percent describe themselves as politically moderate, 30% as moderately liberal and 38% as somewhat or very liberal. The remaining 17% of the sample has political views that range from somewhat conservative to very conservative.[5]

Survey Questions

We reviewed a number of economist surveys and surveys of the general public to collect a set of

[5] We find some differences between respondents and nonrespondents in a search of AERE member webpages. The sample is overrepresented by United States residents and PhD degree holders. Among the academics, the sample is slightly underrepresented by those in colleges of arts and sciences (Haab and Whitehead 2013b).

environmental opinion questions[6]. We also wrote a group of questions that state some results that are often presented in introductory and environmental and resource economics courses. A draft survey was reviewed by colleagues and revised in response to their suggestions. In the end, we developed a survey that posed thirty-six opinion questions that were randomly ordered in ten randomly assigned groups of mostly similar topical questions.[7] These questions were in the form: "Please indicate how much you agree or disagree with each of these statements" with Likert scale responses "disagree completely, disagree mostly, neither agree nor disagree, agree mostly and agree completely."

A group of three questions presented statements that typically appear in a market failure section of the principles of microeconomics course: negative externalities, public goods and common pool resources. One of the major contributions of the field of environmental economics is incentive-based regulatory policy in response to the purported inefficiency of command and control regulation. Four statements addressed these issues. Two groups of questions concerned renewable resource use. One group considered some of the basic tenets of forestry economics. The second group of renewable resource questions concerned fishery economics. Our coverage

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[6] The sources are Fuller and Geide-Stevenson (2003), Whaples (2009), GfK Roper Consulting Green Gauge® US survey (http://www.scjohnson.com/en/commitment/focus-on/greengauge.aspx) and the SurveyMonkey® Question Bank.

[7] A set of tables reporting the statements and all description and statistical results discussed in this paper can be found in an online appendix.

of nonrenewable resource economics was limited to one question, a simple version of Hotelling's Rule. We presented the two environmental policy statements from the Whaples (2009) survey about GMOs and recycling. Several questions addressed the role of environmental policy in the macroeconomy. A few questions concerned economic growth and sustainability. And, a number of questions ventured outside the realm of economics and considered environmental attitudes. The 36 statements are presented in the results section.

Another series of questions considering concern about environmental problems was asked: "How concerned are you about these environmental and natural resource issues?" and given a Likert scale of responses: extremely concerned, very concerned, moderately concerned, slightly concerned and not at all concerned. By far, the most concerning issue is climate change. Seventy-three percent of respondents are very or extremely concerned about climate change. More than 50% are very or extremely concerned about overfishing (65%), fish and wildlife habitat (61%), air quality (56%), groundwater (54%), surface water quality and renewable energy (52%). Less than 50% of the sample is very or extremely concerned about drinking water quality (48%), forest conservation (46%), land conservation (42%), food safety (40%), hazardous wastes (38%), mining impacts (38%), invasive species (34%) and solid waste (23%). In addition to these measures of environmental concern, 65% of the sample thinks that the "planet's environment" has gotten slightly worse, somewhat worse or more since 2000 and 69% think that it will be slightly worse, somewhat worse or more in 2025. These are used as independent variables in the multivariate analysis.

Consensus Analysis

To investigate the level of consensus, in addition to basic agreement (or disagreement), among AERE members, we turn to statistical consensus. Unfortunately, there is little consensus on methods for measuring consensus from a sample of responses to categorical Likert scale responses such as those used in this survey. Any measure of consensus of responses will necessarily convert the ordinal responses into a cardinal measure. The average response—found by converting responses to a numerical value, for example, Agree Completely=1 and Disagree Completely=5—gives a measure of the intensity of the response, and can be interpreted as a measure of consensus if the average falls near the extremes, the average loses the "consensus" interpretation in the middle range of responses. For example, if the average response across all respondents is close to either 1 or 5, it must be the case that there is little dispersion between responses—dispersion of responses would lead to averages nearer to the middle of the range. But an average response of 2 (agree mostly), could result from consensus among respondents such that they all answer 2, or it could result from a large number of respondents answering that they agree completely (response=1) and a smaller minority answering they disagree completely (response=5). The average itself cannot distinguish between these two cases.

As such, any discussion of consensus of responses to a particular question must include some measure of dispersion of those responses. One candidate measure is the standard deviation of responses based on the translation of categories to numerical responses. Although this translation is arbitrary and will be sensitive to the values chosen, as long as the value assignments are consistent across questions, the standard deviation should provide a means of comparing response dispersion across questions.

The operations research/information theory literature has taken on the issue of deriving measures of dispersion/consensus from ordinal responses in a more rigorous fashion in an attempt to understand group decision making and consensus building. Tastle and Wierman (2007) propose a set of three rules that must be satisfied by a measure of consensus for Likert scale type responses. These three rules are (paraphrased and adapted to the current situation): (1) If the sample of respondents exactly divide themselves in half, with half responding agree completely and the other half responding disagree completely, the measure of consensus should be 0 (no consensus); (2) If all respondents give the same response, the measure of consensus should be 1 (complete consensus); (3) If respondents respond such that more than half of the respondents (n/2 +1) choose the same response, the measure of consensus must be greater than 0.

Perhaps the best known and widely used measure of consensus for categorical response questions is Shannon Entropy. Given a set of probabilities from an empirical distribution, p_1, $p_2,\ldots,p_5$ (e.g., categorical response percentages from a sample of respondents), the Shannon Entropy (Shannon, 1948) is measured as Entropy=$\sum_{i=1}^{N} p_i log_2(p_i)$. Tastle and Wierman show that Shannon Entropy fails to satisfies their three rules for a measure of consensus. Further, Tastle and Wierman argue against the use of standard deviation as a measure of ordinal dispersion on the grounds that the standard deviation necessarily assumes strict cardinality of responses which is obviously violated in Likert-scale responses.

As an alternative, Tastle and Wierman propose the following measure of consensus (labeled here TW Consensus) that satisfies their three criterion,

TW Consensus = $1 + \sum_{i=1}^{N} p_i log_2 \left(\frac{|X_i - \mu_X|}{d_X}\right)$,

where μ_X is the average response value for the sample, X_i is the response value (in our case, $X_i \in \{1,2,3,4,5\}$), and $d_X = X_{max} - X_{min}$.

While not obviously intuitive, entropy measures provide a measure of the amount of information contained in outcomes from a discrete random variable. Perhaps most relevant to the current application, for both the Shannon and TW measures of entropy, a move toward equalization of the response probabilities will increase entropy—indicating less consensus. As a referee has pointed out, this is troubling when applied to Likert-type responses if responses are concentrated around a middle category indicating neither agreement nor disagreement. In effect it is possible to have consensus around "neither agree nor disagree." As such, we categorize results in terms of both level of consensus and level of agreement/disagreement, thus at least partially avoiding confusion over what it means to have consensus around a neutral response.

In the online appendix, we present the frequency distributions of responses for each of the thirty-six statements presented to our sample. In addition, we present the measures of Shannon Entropy (Entropy), Tastle and Wierman consensus (TW Consensus) and the standard deviation of the responses (Std Dev). Although we agree with Tastle and Wierman's argument against the use of standard deviation as a measure of consensus in principle, there is an extraordinary correlation between the three measures consensus.

Determinants of Opinion

We use the standard ordered logistic regression model to estimate the determinants of opinion for the 36 statements. The sample size is 328 cases for which we have complete data for all of the independent variables. We use incomplete case analysis allowing for different sample sizes for

each statement. The sample size for each regression ranges from 319 to 327 due to item nonresponse on the dependent variables. Complete case regression analysis would reduce the samples for each regression to 288. The independent variables include Google Scholar research citations, indicators for PhD holders and United States residents and other variables from questions on the survey: environmental and natural resource concern, ideology, work-related tasks, *JEL* fields and demographic variables.

Factor analysis, a data reduction technique, is used with the measures of environmental and natural resource concern to develop two variables that more parsimoniously measure concern for use in regression analysis. The first variable, which we call "environmental concern," loads highly positively on drinking water quality (0.26), food safety (0.23), solid waste (0.21), surface water quality (0.18), air quality (0.18), hazardous waste (0.16), groundwater (0.14) and renewable energy (0.12). The other variables of environmental concern have small positive or negative factor loadings: mining impacts (0.04), land conservation (0.03), forest conservation (-0.01), climate change (-0.05), fish and wildlife habitat (-0.09), invasive species (-0.09), and overfishing (-0.15). The second variable, which we call "natural resource concern," loads highly positively on overfishing (0.31), fish and wildlife habitat (0.29), invasive species (0.27), forest conservation (0.21), climate change (0.19), land conservation (0.15) and mining impacts (0.14). The other variables of natural resource concern have small positive or negative factor loadings: renewable energy (0.02), groundwater (0.004), hazardous waste (-0.01), surface water quality (-0.03), air quality (-0.05), solid waste (-0.07), food safety (-0.11) and drinking water quality (-0.15).

Each of the models are weighted in order to be more representative of the AERE

population. Each of the independent variables has explanatory power at the 10% significance level in at least one of the models. All told, 20% of the almost 800 regression coefficients are statistically significant at the 10% level, excluding the constants. Several of the items of opinion resisted modeling efforts with model chi-square statistics that are not significant at the 10% level. There is no correlation between the ranks of consensus and statistical power of the regression models.

Results

We organize the results according to statements about economic principles, policy, macroeconomics, sustainability and environmental attitudes. We further group the results into those that have high agreement and high consensus, high agreement and low consensus and low agreement and low consensus. Given that random responses would lead to 40% agreement (agree completely plus agree mostly) or disagreement (disagree completely plus disagree mostly), we define high agreement/disagreement when 60% or more agree or disagree with a statement. Note that short statements cannot completely specify all of the details of the issue. This may result in more "neither" responses or the appearance of disagreement relative to a more nuanced and detailed statement of the issue. We define high and low consensus as being in the upper and lower thirds of the consensus rankings (i.e., top and bottom 12 of 36).

We classify 13 of the 36 statements as economic principles. These are statements that are based on material typically taught in introductory micro and environmental and resource economics courses. Eight of the statements are classified as environmental policy. Some of these are very specific and some are quite broad. Five of the statements relate to macroeconomics and

six are about growth and sustainability. Four of the statements are classified as environmental attitudes.

Economic Principles

Two statements about market failure principles, public goods and common pool resources, generate high agreement and high consensus. Almost all, 96%, respondents disagreed with the public goods statement "unregulated markets provide public goods in optimal quantities." In the regression analysis three variables are statistically significant at, at least, the 10% level. Respondents who are concerned about natural resources, liberals and energy economists are less likely to agree. Eighty-six percent agree that "unregulated common-pool resources face the 'tragedy of the commons' problem." Respondents who are concerned about natural resources, those who have the PhD degree, are U.S. residents and older are more likely to agree.

A third market failure statement generated high agreement but low consensus. Seventy-eight percent of respondents disagree with: "unregulated markets provide optimal quantities of goods whose production and consumption generate negative externalities." Four variables are (marginally)statistically significant in explaining agreement but the model is not statistically significant. Those who are concerned about natural resources, those who teach or are administrators and energy economists are less likely to agree. Another related statement generated high agreement but low consensus. Sixty percent disagreed with the "free market environmentalism" statement that "the free market, property rights, and tort law provide the best tools to preserve the health and sustainability of the environment." Those with a concern for natural resources, liberals and older respondents are less likely to agree. Respondents in three

JEL categories (general, renewable resources and energy) are more likely to agree. One might speculate that the statement about unregulated negative externalities generates low consensus due to Coasian bargaining, but the correlation between responses to these two statements is very low.

Two statements about incentive-based policy generate high agreement and consensus. Eighty-seven percent agree that "individual transferable quotas are a more economically efficient approach to fishery regulation than open access regulations." Those economists who work on policy issues, renewable resource economists and those with more children are more likely to agree. Respondents with more concern about the environment and agricultural economists are less likely to agree. Eighty-six percent agree that "emissions taxes or marketable emissions permits are a more economically efficient approach to pollution control than emissions standards." Respondents with a concern for the environment and those who work at an academic institution are less likely to agree. Those with a concern about natural resources, energy economists, those with a PhD and more children are more likely to agree.

A normative statement about forest management generates high agreement and high consensus. Eighty-three percent agree that "forests should be managed to provide multiple uses." Only concern about natural resources increases the level of agreement. Responses to two contradictory statements are consistent with the principle of multiple use forestry management. These achieved high agreement but low consensus. Sixty-four percent agree that "the optimal forest rotation is when the harvest generates the maximum economic yield of timber and nonmarket resources" while 63% disagree that "forests should be managed to achieve the maximum sustainable yield of timber resources." There is a negative and statistically significant

correlation between the responses. Males and renewable resource economists are more likely to agree with the optimal yield statement. Those who think that the environment will worsen in the future, those who conduct research and older respondents are less likely to agree. Respondents who have higher concern for the environment and those who do research are more likely to agree with the sustainable yield statement. Respondents who have concern about natural resources, those who teach or do policy, renewable resource economists, those with a PhD and males are less likely to agree. These three results indicate that AERE survey respondents feel that nonmarket values are important in forestry, in addition to market values.

Four other statements that may be taught in undergraduate environmental and resource economics courses generated low agreement and low consensus. Fifty-six percent agree that "emissions standards are rigid, and insensitive to geographical and technological differences." Respondents who are concerned about the environment, who think the environment will worsen in the future and agricultural economists are less likely to agree. Academics and those with more children are more likely to agree. This statement would have likely generated more agreement a few decades ago when command and control regulation was dominant and more rigid.

Two statements, based on a simple static bioeconomic model of the fishery, consistently ranked at the bottom of all three measures of consensus. Fifty-five percent disagree that "ocean fisheries should be managed to achieve the maximum sustainable yield from commercial catch" while 46% agree that "ocean fisheries should be managed to achieve the maximum economic yield from commercial and recreational catch." These two statements ask about different management objectives and there is a negative and statistically significant correlation between the answers. The lack of consensus may be due to the fact that respondents were using a dynamic

model to respond to the statements. Respondents who are concerned about the environment and who conduct research are more likely to agree. Those who have concern about natural resources, those who teach, renewable resource economists and those who have a PhD are less likely to agree with the sustainable yield statement. Respondents who think that the environment will worsen in the future are less likely to agree with the economic yield question. Respondents who teach, those in administration, those with the PhD and males are more likely to agree.

In response to a simple version of Hotelling's Rule, 36% disagreed that "nonrenewable resource prices tend to rise at the rate of interest over time (adjusted for new discoveries, etc)." Respondents who think the environment has worsened and academic economists are less likely to agree. Those with a PhD degree and children are more likely to agree. As pointed out by a referee, Hotelling's rule is actually about resource rents rising over time and not price and there are a number of unmentioned factors that influence the price path.

Policy

Three statements about economic policy generate high agreement and some (i.e., neither high nor low) consensus. Eighty-four percent agree that "the U.S. should increase energy taxes." Respondents with more concern about the environment, agricultural and renewable resource economists are less likely to agree. Respondents with more concern about natural resources, liberals, policy economists and administrators are more likely to agree.

Eighty percent disagree with the statement: "reducing the regulatory power of the Environmental Protection Agency (EPA) would improve the economic efficiency of the U.S. economy." Only 59% of the Fuller and Geide-Stevenson (2003) AEA sample disagreed. While

the response categories are not the same and this complicates comparison, as pointed out by a referee, the difference likely reflects the greater belief amongst environmental economists that internalizing negative externalities would lead to an increase in efficiency. Respondents with more concern about natural resources, liberals and administrators are less likely to agree. Generalists (i.e., Q0) are more likely to agree.

About the same percentage of AERE and AEA respondents from the Whaples (2009) survey, 66% compared to 58%, disagree that "laws mandating municipal curbside recycling should be eliminated." Respondents who are more concerned about the environment and natural resources, liberals and older respondents are less likely to agree. United States residents and those with a PhD are more likely to agree.

The other statement from the Whaples (2009) survey generated high agreement but low consensus. Sixty-two percent of the AERE sample disagrees that "the U.S. should ban genetically modified crops." This is lower than the AEA sample where 82% disagree. Those with concern about the environment and environmental economists are more likely to agree. Respondents with more citations, agricultural economists, academics and U.S. residents are less likely to agree.

Two other policy statements generated low agreement and some consensus. Fifty-six percent of the sample agrees that "local governments should provide more incentives for people to recycle." Respondents with concern about the environment and those who think the environment has gotten worse since 2000 are more likely to agree. Nonrenewable resource and energy economists, residents of the United States and males are less likely to agree. Forty-seven

percent disagree that "new technologies will surely come along to solve environmental problems before they get out of hand." Those with concern for natural resources and U.S. residents are less likely to agree.

Only three statements produced the neutral response as the most likely response and two of these are in the policy category. Oddly, both of these are high on the consensus rankings due to the lack of strong opinions (i.e., few answered disagree completely or agree completely). Fifty-eight percent could neither agree nor disagree with "a manufacturer that voluntarily reduces the environmental impact of its production process and products is making a smart business decision." As suggested by a referee, this may reflect the mixed evidence on the Porter hypothesis. Those with concern about natural resources and older respondents are more likely to agree with this statement. Concern about the environment decreases agreement. Forty-five percent could neither agree nor disagree with "discussion of pollution in trade negotiations is likely to lead to 'green protectionism' by high-income countries." Those respondents with more research citations and administrators are more likely to agree. Respondents who conduct research and those with more children are less likely to agree.

Macroeconomics

We expect less agreement and consensus in the broad category that contains statements about the macroeconomy. Nevertheless, three of the statements generate high agreement and high consensus. Eighty-four percent disagree that "we worry too much about the future of the environment and not enough about prices and jobs today." Respondents with concern about natural resources, those who think the environment will worsen, liberals and those who teach are

less likely to agree. Eighty-eight percent disagree that "we should wait until the economy gets better before we make the environment a major policy priority." Those with concern about the environment and natural resources are less likely to agree. Academic economists are more likely to agree with both of these statements. Seventy-three percent disagree that "if business is forced to spend a lot of money on environmental protection, it won't be able to invest in research and development to keep us competitive in the international market." Liberals are less likely to agree. These responses should be assessed in the context of the business cycle. The survey took place during the recovery phase, three years after the end of the Great Recession, with the unemployment rate at about 8%.

There is little agreement but some consensus about two statements considering the macroeconomics of incentive-based policy revenue. Forty-nine percent agree with the revenue recycling statement: "emissions tax or permit auction revenues should be returned to the public through dividends or lower income taxes." Those with more research citations and energy economists are more likely to agree. Agricultural economists are less likely to agree. Forty-seven percent of respondents neither agree nor disagree about whether "emissions tax or permit auction revenues should be used to reduce the national debt." Concern about the environment and age decreases agreement. Concern about natural resources and a field in energy economics increases agreement.

Sustainability

Six of the statements considered sustainability, resource constraints and limits to growth. Three statements in this category generate high agreement and some consensus. The sustainable

development statement from the Bruntlandt Commission was one of these. Eighty-three percent agree that "the management of resource use should aim to meet the needs of the present generation without compromising the ability of future generations to meet their own needs." Respondents who are concerned about natural resources are more likely to agree. Respondents who teach and who are older are less likely to agree.

Seventy-eight percent disagree that "economic growth always harms the environment." This might reflect rejection of the notion of a fundamental tradeoff between economic growth and environmental degradation. Or, as suggested by a referee, this might reflect evidence of belief in the Environmental Kuznets Curve (EKC). Those respondents with concern about the environment, those who think that the environment will worsen in the future and renewable resource economists are more likely to agree. United States residents are less likely to agree. In contrast, seventy-five percent agree that "some pollution is inevitable if we are going to continue to make improvements in our standard of living." Respondents who think that the environment will worsen in the future, renewable resource economists and those who are older are less likely to agree. Those with a PhD and males are more likely to agree. This is little correlation between these two seemingly contradictory results.

Three economic growth statements generated low agreement and low consensus. Considering the EKC interpretation above, one statement makes the case for the upward sloping portion but only 46% percent agree that "economic growth is needed in order to protect the environment." Economists who are generalists and those with more children are more likely to agree. Those with concern about natural resources and those who think the environment will worsen are less likely to agree. Forty-eight percent agreed with a "steady-state economy"

statement: “there exists a maximum level of economic growth that can be sustained without undermining the resource base upon which it depends.” Respondents who teach, those with a PhD and United States residents are less likely to agree with this statement. Academics and older respondents are more likely to agree. Only 40% agree that “population growth inevitably degrades the environment.” Respondents who are concerned about natural resources, those who think that the environment will worsen in the future and liberals are more likely to agree. Administrators and those with children are less likely to agree.

Environmental Attitudes

Two of the four environmental attitude statements generatehigh agreement and high consensus. Respondents know what is good for the environment and feel good when they do it. Ninety percent disagree with “I am very confused about what’s good and what’s bad for the environment.” Respondents who are more concerned about natural resources, energy economists and older respondents are less likely to agree. Those who think that the environment will worsen in the future, those who work on policy and generalists are more likely to be confused. Eighty-six percent agree with “I feel good when I take steps to help the environment.” Respondents with more concern about the environment and natural resources and who think the environment has worsened are more likely to agree

Two other statements generate low consensus. Sixty-three percent disagreed with “I just don’t have the time to worry about how all of my actions affect the environment.” Those who are more concerned about the environment and those with more children are less likely to agree. Our sample of environmental and resource economists is quite varied on their level of shame if they

were to be caught not recycling. “I would be embarrassed if people I know caught me not recycling my trash,” ranked very low in consensus. The average response is almost exactly neutral with 43% percent who agree and 36% who disagree. As suggested by a referee, it might be the case that respondents who disagree are considering the markets for recycling and the fact that low prices lead to recycling material being sent to the landfill. A large number of explanatory factors are important when explaining this item. Respondents with more concern about the environment and natural resources and liberals are more likely to agree. Respondents who teach, live in the United States and males are less likely to agree.

Conclusions

At the beginning of this article we asked about whether environmental and resource economists are one-handed. The answer is a tentative yes. We find that AERE members tend to agree and even reach consensus on a large number of items of opinion but there are also a number of statements for which consensus is more difficult to reach. We find that there is over 60% agreement on 22 of 36 statements and high consensus on 10 of these 22 statements. Five of the high consensus statements consider economic principles, three consider macroeconomics and two consider environmental attitudes. Consensus is not reached on any statements involving specific policies or sustainability. Many of the statements that do not reach consensus can be explained as reasonable disagreements of opinion or a result of minor wording decisions that make the statement overly strident.

We found several broad themes of agreement and consensus. Not surprisingly, all three of the market failure statements generate high agreement and two of the three generated high

consensus. AERE members feel that nonmarket economic values are important in forestry and fisheries, in addition to market values. AERE members do not feel that environmental policy is a drag on macroeconomic performance and there is little feeling that natural resource scarcity constrains economic growth. AERE members are good environmental stewards or, at least, attempt to be adequate stewards with some feeling of personal responsibility. There is high agreement but less consensus on a few specific environmental policies.

The economic opinion literature suggests that ideology, gender and research activity play a role in explaining opinions (Haab and Whitehead 2013b). In contrast, we find that agreement with environmental and resource economics statements are influenced primarily by concern about the environment and natural resources. Other determinants, holding the PhD degree, age, future degradation of the environment, ideology and U.S. residence, are important in explaining responses in 25% or more of the models. Teaching, fields in renewable resources and energy, academic jobs, number of children and gender is important in 8 out of 36 models. Administrative, research and policy work-related duties, fields in general agriculture and natural resources, nonrenewable and environmental economics, perceptions that the environment has worsened and research productivity have more limited effects.

The most striking result is that concern about environmental and natural resources are the most important determinants of opinion. The environmental concern variable is statistically significant in 15 of 36 models and concern about natural resources in significant in 21 out of 36 models. Concern about natural resources, but not the environment, affects agreement with the four market failure principles that are the foundation of environmental and resource economics. Concern about environmental and natural resources influences statements about environmental

policy instruments, forestry, fisheries, specific environmental policies, sustainability and growth. AERE members have opinions driven by their preferences in addition to concerns about efficiency and other economic goals.

Another striking result is that environmental and resource economists are not ideology free. Politically liberal respondents are more likely to see market failure arise with public goods, to think that population degrades the environment, to support energy taxes and to be embarrassed if caught not recycling. Liberal economists are less likely to support free market environmentalism, elimination of mandatory recycling laws and reducing the power of the EPA. Liberals are less likely to worry about macroeconomic performance relative to the environment.

Future research with these data could better analyze the determinants of opinion. For example, more work is needed to understand why concern about the environment and natural resources is so important. Also, differences across ideology have been found in similar research and some important effects are evident here. Future surveys could measure the opinions of students before and after a course in environmental and resource economics to assess the instructor and textbooks (e.g., is there a liberal bias in environmental and resource economics; i.e., do more liberal professors make their students more liberal?). Future surveys could also compare the opinions of economists and the general public on policy and macroeconomic issues (e.g., Sapienza and Zingales 2013)). This might reveal a distance between economists and the general public that might be bridged with outreach activities.

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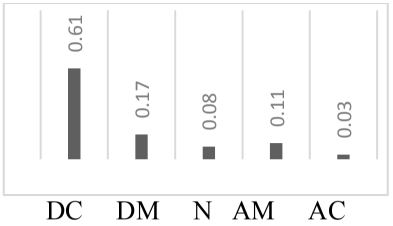
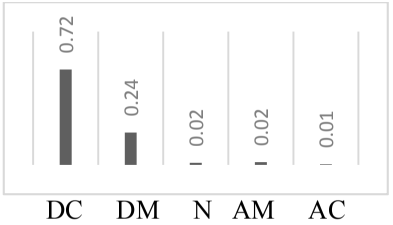
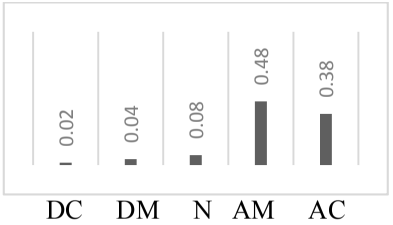
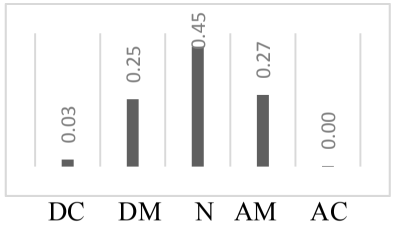
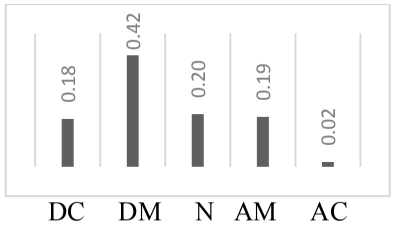
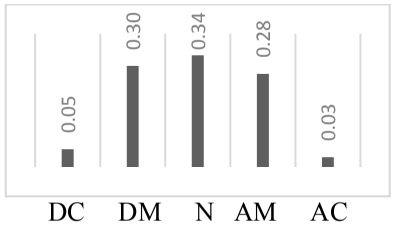
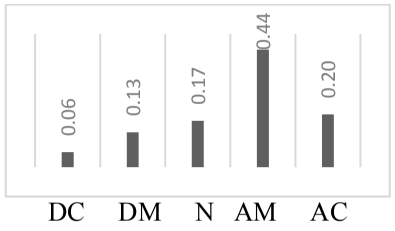
Appendix

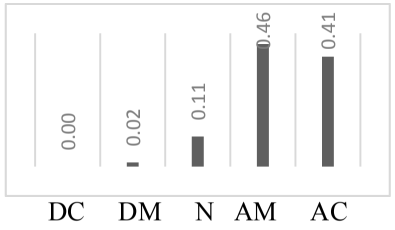
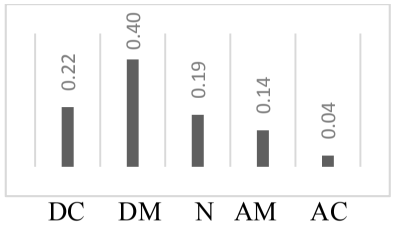
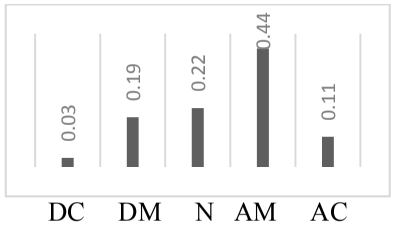
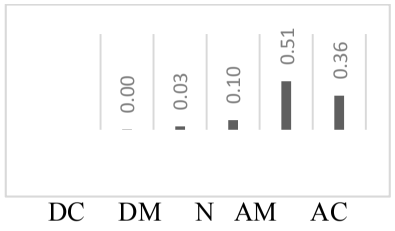
Table 1. Statements of Consensus

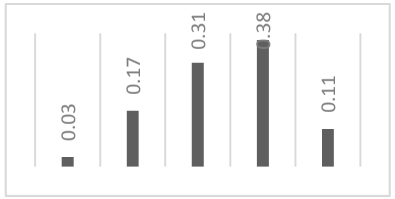
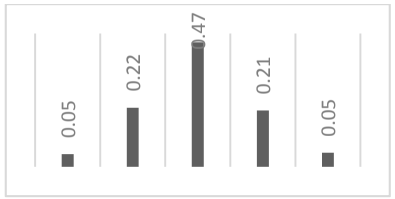
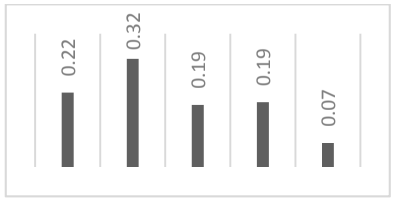
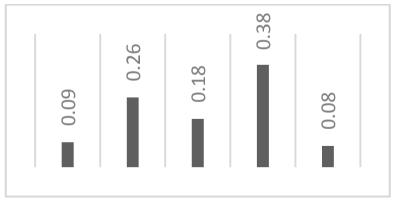
Table 2. Summary of Independent Variables

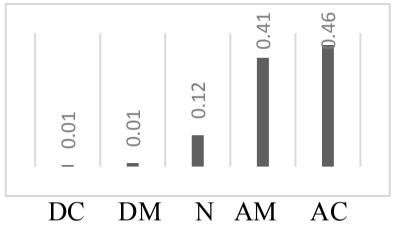
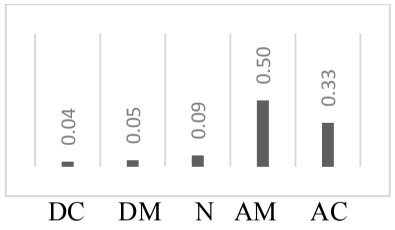
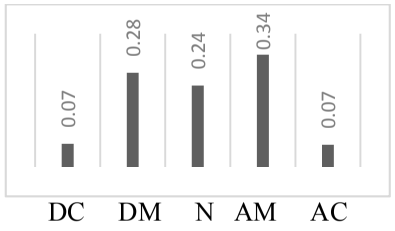
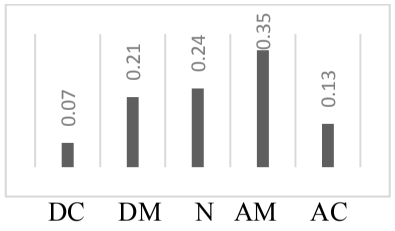
Table 3. Logistic Regression Determinants of Agreement

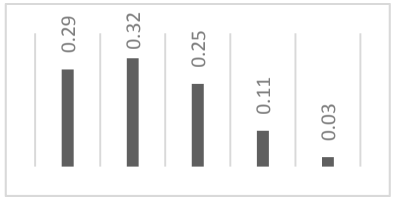
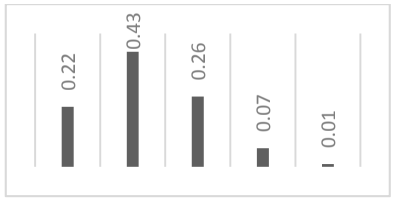
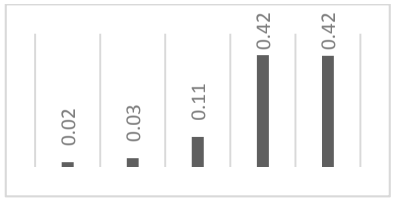
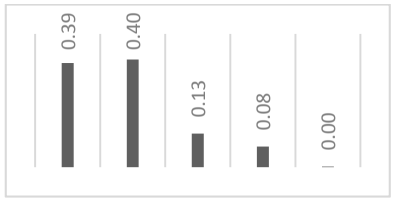
Table 1. Statements and Consensus						
[Screen number - Statement number] Statement (sample size)	Frequency Distribution DC = disagree completely (1), DM = disagree mostly (2), N = neither agree or disagree (3), AM = agree mostly (4), AC = agree completely (5)	Descriptive Statistics / Measures of Consensus				
		Summary	Mean (Std. Dev.)	Entropy	TW Consensus	Average Consensus Rank
[1-2] Unregulated markets provide optimal quantities of goods whose production and consumption generate negative externalities. (345)		78% DC + DM	1.79 (1.17)	1.67	0.55	26
[1-3] Unregulated markets provide public goods in optimal quantities. (350)		96% DC + DM	1.36 (0.67)	1.09	0.78	1
[1-4] Unregulated common-pool resources face the "tragedy of the commons" problem. (351)		86% AM + AC	4.17 (0.88)	1.62	0.71	12

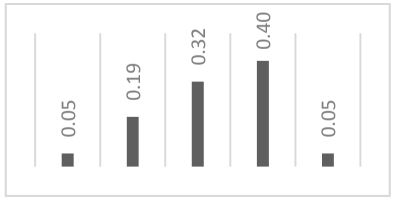
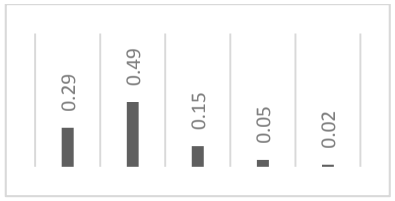
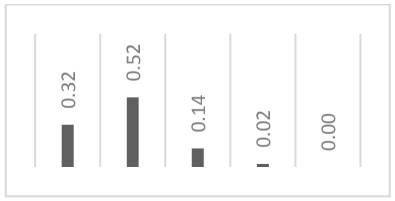
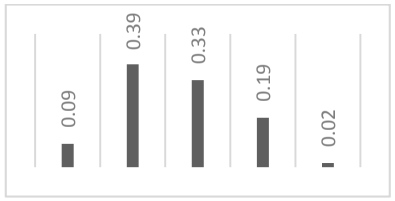
[2-4] Discussion of pollution in trade negotiations is likely to lead to "green protectionism" by high-income countries. (342)		45% N	2.97 (0.80)	1.69	0.75	10
[2-5] The free market, property rights, and tort law provide the best tools to preserve the health and sustainability of the environment. (351)		60% DC + DM	2.45 (1.04)	1.99	0.61	26
[2-6] Nonrenewable resource prices tend to rise at the rate of interest over time (adjusted for new discoveries, etc). (344)		36% DC + DM	2.93 (0.95)	1.94	0.67	22
[3-7] The optimal forest rotation is when the harvest generates the maximum economic yield of timber and nonmarket resources. (341)		64% AM + AC	3.59 (1.11)	2.04	0.59	31

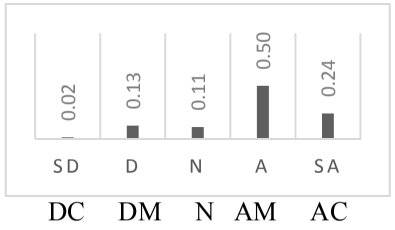
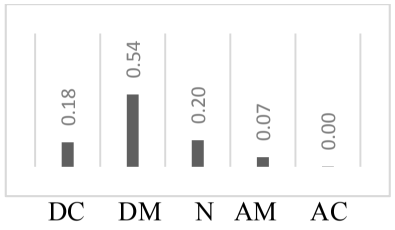
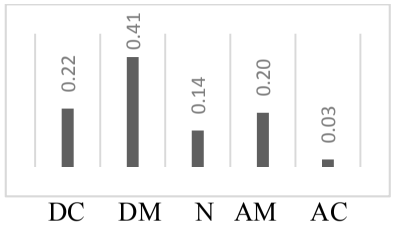
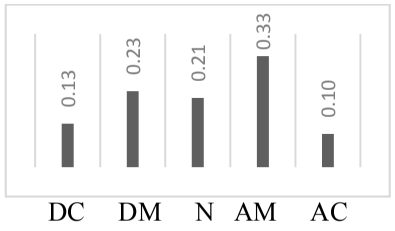
[3-8] Forests should be managed to provide multiple uses. (347)		83% AM + AC	4.27 (0.72)	1.49	0.75	3
[3-9] Forests should be managed to achieve the maximum sustainable yield of timber resources. (346)		63% DC + DM	2.37 (1.10)	2.06	0.59	30
[4-10] Emissions standards are rigid, and insensitive to geographical and technological differences. (346)		56% AM + AC	3.42 (1.03)	1.98	0.62	25
[4-11] Emissions taxes or marketable emissions permits are a more economically efficient approach to pollution control than emissions standards. (347)		86% AM + AC	4.18 (0.77)	1.55	0.75	6

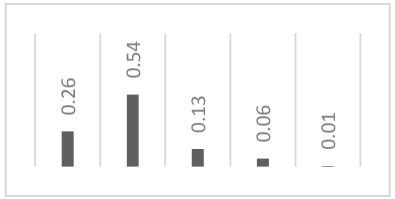
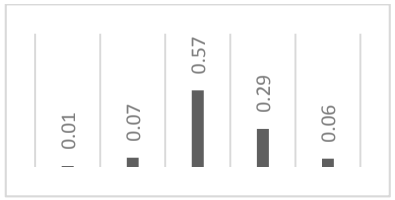
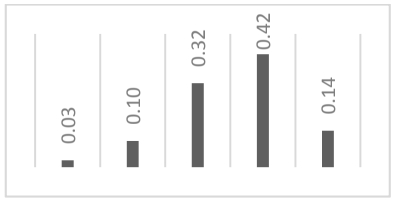
[4-12] Emissions tax or permit auction revenues should be returned to the public through dividends or lower income taxes. (348)		49% AM + AC	3.38 (0.99)	1.99	0.64	24
[4-13] Emissions tax or permit auction revenues should be used to reduce the national debt. (346)		47% N	3.00 (0.91)	1.90	0.72	15
[5-14] Ocean fisheries should be managed to achieve the maximum sustainable yield from commercial catch. (344)		55% DC + DM	2.57 (1.23)	2.19	0.52	36
[5-15] Ocean fisheries should be managed to achieve the maximum economic yield from commercial and recreational catch. (343)		46% AM + AC	3.10 (1.15)	2.09	0.56	34

[5-16] Individual transferable quotas are a more economically efficient approach to fishery regulation than open access regulations. (344)		87% AM + AC	4.30 (0.77)	1.53	0.73	7
[6-17] The management of resource use should aim to meet the needs of the present generation without compromising the ability of future generations to meet their own needs. (355)		83% AM + AC	4.03 (0.98)	1.73	0.70	18
[6-18] Population growth inevitably degrades the environment. (355)		40% AM + AC	3.05 (1.08)	2.07	0.60	29
[6-19] There exists a maximum level of economic growth that can be sustained without undermining the resource base upon which it depends. (351)		48% AM + AC	3.25 (1.14)	2.15	0.56	33

[7-20] The U.S. should ban genetically modified crops. (358)		62% DC + DM	2.26 (1.08)	2.03	0.60	28
[7-21] Laws mandating municipal curbside recycling should be eliminated. (353)		66% DC + DM	2.21 (0.90)	1.85	0.69	17
[7-22] The U.S. should increase energy taxes. (358)		84% AM + AC	4.18 (0.89)	1.67	0.70	13
[7-23] Reducing the regulatory power of the Environmental Protection Agency (EPA) would improve the economic efficiency of the U.S. economy. (356)		80% DC + DM	1.90 (0.92)	1.74	0.69	16

[8-24] Economic growth is needed in order to protect the environment. (352)		46% AM + AC	3.21 (0.97)	1.93	0.65	23
[8-25] Economic growth always harms the environment. (355)		78% DC + DM	2.01 (0.89)	1.75	0.73	14
[8-26] We worry too much about the future of the environment and not enough about prices and jobs today. (355)		84% DC + DM	1.87 (0.73)	1.54	0.77	3
[9-27] New technologies will surely come along to solve environmental problems before they get out of hand. (355)		47% DC + DM	2.66 (0.93)	1.91	0.66	21

[9-28] Some pollution is inevitable if we are going to continue to make improvements in our standard of living. (354)		74% AM + AC	3.83 (0.99)	1.82	0.67	19
[9-29] If business is forced to spend a lot of money on environmental protection, it won't be able to invest in research and development to keep us competitive in the international market. (357)		73% DC + DM	2.17 (0.82)	1.69	0.74	11
[9-30] I just don't have the time to worry about how all of my actions affect the environment. (355)		63% DC + DM	2.41 (1.12)	2.01	0.58	31
[9-31] I would be embarrassed if people I know caught me not recycling my trash. (356)		43% AM + AC	3.04 (1.22)	2.20	0.53	35

[10-32] I am very confused about what's good and what's bad for the environment. (353)		90% DC + DM	2.00 (0.83)	1.65	0.77	9
[10-33] I feel good when I take steps to help the environment. (353)		86% AM + AC	4.15 (0.68)	1.45	0.79	2
[10-34] A manufacturer that voluntarily reduces the environmental impact of its production process and products is making a smart business decision. (354)		58% N	3.32 (0.73)	1.55	0.75	5
[10-35] Local governments should provide more incentives for people to recycle. (353)		56% AM + AC	3.55 (0.94)	1.91	0.66	19

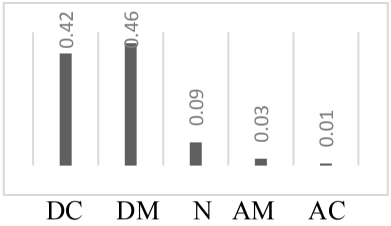
[10-36] We should wait until the economy gets better before we make the environment a major policy priority. (356)		88% DC + DM	1.74 (0.78)	1.54	0.73	8

Table 2. Summary of Independent Variables					
Variable Name	Label	Mean	Std Dev	Min	Max
Environmental Concern	Factor measuring concern about environmental issues	0	1	-3.31	2.32
Natural Resource Concern	Factor measuring concern about natural resource issues	0	1	-3.01	2.39
Worse since 2000	=1 if environment is worse than in 2000	0.65	0.48	0	1
Worse in 2025	=1 if environment will be worse in 2025	0.69	0.46	0	1
Liberal	=1 if political views are very, somewhat or moderately liberal	0.69	0.47	0	1
Citations	Google Scholar citations	337.07	1196.94	0	>10,000
Teaching	=1 if work involves teaching	0.67	0.47	0	1
Research	=1 if work involves research	0.91	0.28	0	1
Policy	=1 if work involves policy	0.31	0.46	0	1
Administration	=1 if work involves administration	0.23	0.42	0	1
JEL Q0 General	=1 if JEL category General	0.14	0.35	0	1
JEL Q1 Agriculture	=1 if JEL category Agriculture	0.20	0.40	0	1
JEL Q2 Renewable	=1 if JEL category Renewable Resources and Conservation	0.41	0.49	0	1
JEL Q3 Nonrenewable	=1 if JEL category Nonrenewable Resources and Conservation	0.15	0.36	0	1
JEL Q4 Energy	=1 if JEL category Energy	0.28	0.45	0	1
JEL Q5 Environmental	=1 if JEL category Environmental Economics	0.80	0.40	0	1
Academic	=1 if works at an academic institution	0.79	0.41	0	1
PhD	=1 if holds the PhD degree	0.75	0.43	0	1
USA	=1 if United States Resident	0.83	0.37	0	1
Age	Age of respondent	42.59	10.69	25	65
Children	Number of children	1.80	1.00	1	7
Male	=1 if male	0.72	0.45	0	1
Sample Size = 328					

Table 3. Logistic Regression Determinants of Agreement (Group 1)									
Variable	[1] Unregulated markets provide optimal quantities of goods whose production and consumption generate negative externalities.			[2] Unregulated markets provide public goods in optimal quantities.			[3] Unregulated common-pool resources face the "tragedy of the commons" problem.		
	78% Disagree			96% Disagree			86% Agree		
	Coeff.	S.E.	t-stat	Coeff.	S.E.	p-value	Coeff.	S.E.	p-value
Intercept 5	-2.70	0.90	-2.99	-5.54	1.43	-3.87	-0.87	0.80	-1.09
Intercept 4	-1.07	0.86	-1.25	-3.90	1.09	-3.59	1.48	0.80	1.85
Intercept 3	-0.49	0.86	-0.57	-3.29	1.04	-3.16	2.31	0.82	2.84
Intercept 2	0.33	0.86	0.39	-0.50	0.99	-0.50	3.54	0.87	4.08
Environmental Concern	0.13	0.13	0.97	0.19	0.15	1.30	0.09	0.12	0.81
Natural Resource Concern	**-0.22**	**0.13**	**-1.68**	**-0.43**	**0.15**	**-2.91**	**0.37**	**0.12**	**3.04**
Worse since 2000	-0.32	0.29	-1.07	-0.09	0.33	-0.28	-0.31	0.28	-1.11
Worse in 2025	0.13	0.30	0.43	-0.13	0.34	-0.37	0.38	0.28	1.34
Liberal	0.04	0.28	0.14	**-0.57**	**0.31**	**-1.86**	0.11	0.25	0.45
ln(Citations)	0.08	0.08	1.05	0.00	0.09	0.04	-0.08	0.07	-1.08
Teaching	**-0.65**	**0.35**	**-1.83**	-0.60	0.41	-1.45	-0.11	0.34	-0.33
Research	-0.09	0.50	-0.18	0.96	0.60	1.60	-0.43	0.50	-0.87
Policy	-0.33	0.30	-1.07	-0.19	0.35	-0.55	-0.21	0.27	-0.79
Administration	**-0.58**	**0.33**	**-1.78**	0.02	0.36	0.06	0.28	0.27	1.01
JEL Q0 General	-0.07	0.36	-0.18	0.18	0.39	0.46	0.16	0.33	0.49
JEL Q1 Agriculture	0.09	0.31	0.29	-0.05	0.36	-0.13	-0.06	0.28	-0.20
JEL Q2 Renewable	0.11	0.27	0.38	0.24	0.31	0.77	-0.35	0.25	-1.42
JEL Q3 Nonrenewable	0.00	0.37	0.01	0.37	0.41	0.91	-0.05	0.32	-0.16
JEL Q4 Energy	**-0.53**	**0.29**	**-1.82**	**-0.90**	**0.35**	**-2.61**	0.37	0.25	1.48
JEL Q5 Environmental	0.22	0.34	0.64	-0.46	0.36	-1.27	-0.13	0.30	-0.44
Academic	0.06	0.38	0.16	0.08	0.45	0.19	-0.22	0.37	-0.60
PhD	-0.43	0.31	-1.36	-0.39	0.36	-1.09	**0.57**	**0.30**	**1.92**
USA	0.01	0.31	0.02	0.52	0.37	1.40	**0.58**	**0.28**	**2.11**
Age	0.00	0.01	-0.06	0.00	0.02	0.00	0.00	0.01	-0.01
Children	-0.03	0.13	-0.22	-0.17	0.15	-1.14	**0.23**	**0.12**	**2.02**
Male	-0.29	0.27	-1.05	-0.09	0.32	-0.27	0.11	0.25	0.45
$\chi 2$ (p-value)	29.72 (0.125)			43.28 (0.004)			34.25 (0.046)		
Sample size	320			325			328		
Average Consensus Rank	26			1			12		

Table 3. Logistic Regression Determinants of Agreement (Group 2)									
Variable	[4] Discussion of pollution in trade negotiations is likely to lead to "green protectionism" by high-income countries.			[5] The free market, property rights, and tort law provide the best tools to preserve the health and sustainability of the environment.			[6] Nonrenewable resource prices tend to rise at the rate of interest over time (adjusted for new discoveries, etc).		
	45% Neutral			60% Disagree			36% Disagree		
	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat
Intercept 5				-2.49	0.86	-2.92	-2.42	0.83	-2.93
Intercept 4	0.73	0.79	0.92	0.13	0.77	0.17	0.30	0.77	0.39
Intercept 3	2.85	0.80	3.54	1.27	0.77	1.66	1.83	0.78	2.35
Intercept 2	5.61	0.87	6.43	3.62	0.79	4.57	4.25	0.82	5.19
Environmental Concern	0.16	0.12	1.38	0.06	0.11	0.53	0.05	0.11	0.42
Natural Resource Concern	-0.04	0.12	-0.31	**-0.29**	**0.12**	**-2.52**	0.12	0.12	1.05
Worse since 2000	-0.14	0.27	-0.52	-0.31	0.27	-1.15	**-0.45**	**0.27**	**-1.67**
Worse in 2025	-0.46	0.28	-1.62	-0.07	0.27	-0.26	0.10	0.27	0.37
Liberal	-0.24	0.25	-0.95	**-0.71**	**0.25**	**-2.87**	-0.16	0.25	-0.66
ln(Citations)	**0.22**	**0.07**	**2.96**	0.04	0.07	0.52	-0.01	0.07	-0.18
Teaching	-0.22	0.34	-0.65	0.08	0.32	0.25	0.06	0.32	0.18
Research	**-1.17**	**0.50**	**-2.34**	-0.74	0.47	-1.57	-0.33	0.48	-0.69
Policy	0.13	0.27	0.51	-0.16	0.26	-0.62	-0.32	0.26	-1.24
Administration	**0.64**	**0.27**	**2.37**	-0.27	0.27	-1.03	0.00	0.26	-0.01
JEL Q0 General	0.33	0.32	1.04	**0.70**	**0.31**	**2.24**	0.06	0.31	0.20
JEL Q1 Agriculture	0.31	0.28	1.08	0.31	0.28	1.11	0.29	0.27	1.06
JEL Q2 Renewable	0.14	0.25	0.58	**0.74**	**0.24**	**3.06**	0.03	0.24	0.11
JEL Q3 Nonrenewable	-0.46	0.32	-1.44	-0.43	0.32	-1.34	-0.09	0.31	-0.28
JEL Q4 Energy	-0.38	0.25	-1.52	**0.59**	**0.24**	**2.42**	0.06	0.24	0.26
JEL Q5 Environmental	-0.28	0.30	-0.94	0.46	0.29	1.57	-0.28	0.30	-0.92
Academic	0.50	0.36	1.36	-0.21	0.35	-0.58	**-0.99**	**0.35**	**-2.81**
PhD	-0.04	0.29	-0.14	0.38	0.29	1.34	**1.03**	**0.29**	**3.52**
USA	-0.38	0.27	-1.38	-0.41	0.27	-1.55	0.18	0.26	0.68
Age	-0.01	0.01	-0.69	**-0.03**	**0.01**	**-2.15**	-0.02	0.01	-1.55
Children	**-0.35**	**0.11**	**-3.10**	-0.08	0.11	-0.70	**0.22**	**0.11**	**2.00**
Male	0.07	0.25	0.27	0.02	0.24	0.07	-0.18	0.24	-0.76
$\chi 2$ (p-value)	55.57 (< 0.001)			53.20 (< 0.001)			33.26 (0.058)		
Sample size	321			325			319		
Average Consensus Rank	10			26			22		

Table 3. Logistic Regression Determinants of Agreement (Group 3)									
Variable	[7] The optimal forest rotation is when the harvest generates the maximum economic yield of timber and nonmarket resources.			[8] Forests should be managed to provide multiple uses.			[9] Forests should be managed to achieve the maximum sustainable yield of timber resources.		
	64% Agree			83% Agree			63% Disagree		
	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat
Intercept 5	-0.47	0.77	-0.61	0.71	0.80	0.89	-2.61	0.81	-3.23
Intercept 4	1.60	0.77	2.07	3.02	0.82	3.69	-0.72	0.77	-0.94
Intercept 3	2.53	0.78	3.25	5.07	0.90	5.64	0.37	0.76	0.49
Intercept 2	4.00	0.81	4.96				2.44	0.78	3.14
Environmental Concern	-0.02	0.11	-0.19	0.01	0.12	0.11	**0.22**	**0.11**	**1.96**
Natural Resource Concern	-0.07	0.12	-0.61	**0.23**	**0.12**	**1.92**	**-0.20**	**0.11**	**-1.78**
Worse since 2000	-0.05	0.27	-0.18	0.02	0.28	0.07	-0.12	0.27	-0.44
Worse in 2025	**-0.47**	**0.27**	**-1.70**	-0.25	0.28	-0.90	-0.04	0.27	-0.15
Liberal	0.02	0.25	0.08	0.25	0.25	0.99	0.09	0.24	0.36
ln(Citations)	0.08	0.07	1.19	0.05	0.07	0.68	-0.02	0.07	-0.29
Teaching	0.39	0.32	1.21	0.02	0.33	0.05	**-1.03**	**0.32**	**-3.18**
Research	**-0.89**	**0.48**	**-1.87**	-0.28	0.49	-0.56	**1.14**	**0.48**	**2.39**
Policy	0.19	0.26	0.72	-0.10	0.27	-0.37	**-0.43**	**0.26**	**-1.65**
Administration	-0.09	0.26	-0.32	0.31	0.27	1.12	-0.22	0.26	-0.83
JEL Q0 General	0.05	0.31	0.17	0.14	0.32	0.42	0.00	0.31	0.01
JEL Q1 Agriculture	-0.05	0.27	-0.19	-0.02	0.28	-0.06	-0.12	0.27	-0.43
JEL Q2 Renewable	**0.48**	**0.24**	**2.01**	-0.11	0.25	-0.44	**-0.45**	**0.24**	**-1.87**
JEL Q3 Nonrenewable	-0.43	0.31	-1.38	0.25	0.32	0.78	0.24	0.31	0.76
JEL Q4 Energy	-0.25	0.24	-1.04	0.07	0.25	0.27	0.07	0.24	0.28
JEL Q5 Environmental	-0.19	0.30	-0.65	0.10	0.30	0.34	0.28	0.30	0.94
Academic	-0.54	0.35	-1.54	-0.16	0.36	-0.43	-0.13	0.35	-0.36
PhD	0.39	0.29	1.37	-0.12	0.29	-0.40	**-0.61**	**0.28**	**-2.15**
USA	0.10	0.27	0.36	-0.27	0.28	-0.96	-0.23	0.27	-0.88
Age	**-0.03**	**0.01**	**-2.36**	-0.01	0.01	-1.11	0.00	0.01	-0.02
Children	0.03	0.11	0.28	-0.10	0.11	-0.91	0.04	0.11	0.37
Male	**1.06**	**0.25**	**4.29**	-0.02	0.25	-0.07	**-0.60**	**0.24**	**-2.47**
$\chi 2$ (p-value)	42.88 (0.005)			12.17 (0.95)			62.06 (< 0.001)		
Sample size	319			324			324		
Average Consensus Rank	31			3			30		

Table 3. Logistic Regression Determinants of Agreement (Group 4)												
Variable	[10] Emissions standards are rigid, and insensitive to geographical and technological differences.			[11] Emissions taxes or marketable emissions permits are a more economically efficient approach to pollution control than emissions standards.			[12] Emissions tax or permit auction revenues should be returned to the public through dividends or lower income taxes.			[13] Emissions tax or permit auction revenues should be used to reduce the national debt.		
	56% Agree			86% Agree			49% Agree			47% Neutral		
	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat
Intercept 5	-3.28	0.79	-4.17	-0.48	0.82	-0.59	-1.92	0.77	-2.49	-2.32	0.80	-2.90
Intercept 4	-0.84	0.76	-1.09	2.35	0.83	2.83	0.33	0.76	0.43	-0.41	0.77	-0.53
Intercept 3	0.32	0.76	0.43	3.76	0.87	4.31	1.95	0.77	2.53	1.78	0.78	2.28
Intercept 2	2.48	0.81	3.08	6.14	1.28	4.78	4.69	0.88	5.32	4.04	0.83	4.90
Environmental Concern	**-0.26**	**0.12**	**-2.26**	**-0.29**	**0.12**	**-2.33**	-0.14	0.11	-1.24	**-0.29**	**0.12**	**-2.51**
Natural Resource Concern	-0.05	0.12	-0.43	**0.20**	**0.12**	**1.65**	0.16	0.11	1.37	**0.22**	**0.12**	**1.92**
Worse since 2000	0.39	0.27	1.46	0.28	0.28	0.98	0.07	0.26	0.26	-0.16	0.27	-0.60
Worse in 2025	**-0.52**	**0.27**	**-1.92**	0.06	0.29	0.21	-0.31	0.27	-1.16	0.00	0.27	0.00
Liberal	-0.03	0.25	-0.12	-0.05	0.26	-0.19	-0.37	0.25	-1.50	0.38	0.25	1.54
ln(Citations)	0.11	0.07	1.58	-0.03	0.07	-0.36	**0.13**	**0.07**	**1.91**	0.06	0.07	0.84
Teaching	0.15	0.33	0.46	0.33	0.35	0.96	-0.42	0.33	-1.29	0.17	0.33	0.51
Research	-0.51	0.47	-1.07	-0.30	0.51	-0.59	0.04	0.47	0.07	-0.47	0.48	-0.99
Policy	-0.21	0.26	-0.80	-0.29	0.28	-1.05	-0.06	0.26	-0.22	-0.42	0.26	-1.61
Administration	-0.02	0.27	-0.09	-0.29	0.29	-1.01	0.23	0.27	0.85	0.09	0.27	0.34
JEL Q0 General	-0.25	0.32	-0.77	-0.05	0.34	-0.16	-0.31	0.32	-0.98	0.16	0.32	0.50
JEL Q1 Agriculture	**-0.58**	**0.28**	**-2.11**	0.08	0.30	0.26	**-0.49**	**0.28**	**-1.79**	0.08	0.28	0.30
JEL Q2 Renewable	0.25	0.24	1.04	-0.22	0.26	-0.86	-0.05	0.24	-0.22	0.32	0.24	1.30
JEL Q3 Nonrenewable	0.08	0.32	0.25	-0.05	0.34	-0.15	0.11	0.31	0.36	0.18	0.32	0.56
JEL Q4 Energy	0.04	0.24	0.18	**0.52**	**0.26**	**2.01**	**0.55**	**0.24**	**2.26**	**0.43**	**0.25**	**1.74**
JEL Q5 Environmental	0.10	0.30	0.34	-0.22	0.31	-0.70	0.10	0.29	0.33	0.43	0.30	1.43
Academic	**0.65**	**0.36**	**1.82**	**-0.64**	**0.38**	**-1.70**	-0.08	0.35	-0.24	-0.52	0.36	-1.45
PhD	0.11	0.29	0.38	**0.67**	**0.31**	**2.18**	0.38	0.29	1.35	-0.02	0.29	-0.07
USA	0.00	0.27	-0.02	-0.02	0.28	-0.06	-0.32	0.27	-1.21	0.00	0.27	0.01
Age	0.01	0.01	0.56	-0.01	0.01	-1.06	-0.02	0.01	-1.59	**-0.03**	**0.01**	**-2.13**
Children	**0.22**	**0.11**	**1.99**	**0.29**	**0.12**	**2.46**	0.18	0.11	1.60	0.01	0.11	0.08
Male	-0.24	0.25	-0.99	0.18	0.26	0.70	0.23	0.24	0.94	0.19	0.25	0.77
$\chi 2$ (p-value)	42.73 (0.005)			33.57 (0.054)			38.26 (0.017)			30.01 (0.118)		
Sample size	321			322			323			321		
Average Consensus Rank	25			6			24			15		

Table 3. Logistic Regression Determinants of Agreement (Group 5)									
Variable	[14] Ocean fisheries should be managed to achieve the maximum sustainable yield from commercial catch.			[15] Ocean fisheries should be managed to achieve the maximum economic yield from commercial and recreational catch.			[16] Individual transferable quotas are a more economically efficient approach to fishery regulation than open access regulations.		
	55% Disagree			46% Agree			87% Agree		
	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat
Intercept 5	-2.84	0.78	-3.63	-3.11	0.79	-3.93	-0.64	0.82	-0.78
Intercept 4	-1.08	0.76	-1.42	-0.56	0.77	-0.73	1.73	0.83	2.09
Intercept 3	-0.15	0.75	-0.20	0.24	0.77	0.32	3.76	0.91	4.15
Intercept 2	1.48	0.76	1.95	2.03	0.78	2.60	4.80	1.05	4.56
Environmental Concern	**0.21**	**0.11**	**1.86**	0.01	0.11	0.09	**-0.33**	**0.12**	**-2.64**
Natural Resource Concern	**-0.19**	**0.12**	**-1.66**	-0.07	0.12	-0.62	0.20	0.13	1.57
Worse since 2000	-0.20	0.26	-0.75	0.40	0.27	1.48	0.07	0.29	0.24
Worse in 2025	0.07	0.27	0.27	**-0.75**	**0.27**	**-2.74**	0.16	0.29	0.56
Liberal	0.18	0.24	0.72	-0.16	0.25	-0.63	0.12	0.26	0.44
ln(Citations)	-0.07	0.07	-1.03	-0.04	0.07	-0.64	0.06	0.07	0.75
Teaching	**-0.94**	**0.32**	**-2.93**	**0.66**	**0.32**	**2.03**	0.05	0.34	0.14
Research	**1.31**	**0.49**	**2.67**	0.27	0.50	0.53	-0.50	0.53	-0.95
Policy	-0.42	0.26	-1.64	-0.11	0.26	-0.42	**0.55**	**0.29**	**1.94**
Administration	0.01	0.26	0.05	0.41	0.26	1.55	0.00	0.29	0.00
JEL Q0 General	0.28	0.31	0.90	0.29	0.31	0.91	0.30	0.34	0.89
JEL Q1 Agriculture	-0.20	0.27	-0.76	0.41	0.28	1.48	**-0.50**	**0.29**	**-1.71**
JEL Q2 Renewable	**-0.60**	**0.24**	**-2.55**	0.33	0.24	1.38	**0.86**	**0.26**	**3.28**
JEL Q3 Nonrenewable	0.46	0.31	1.50	-0.44	0.31	-1.41	-0.18	0.34	-0.54
JEL Q4 Energy	0.28	0.24	1.18	0.06	0.24	0.26	0.22	0.26	0.84
JEL Q5 Environmental	0.18	0.30	0.62	-0.38	0.30	-1.24	-0.21	0.33	-0.65
Academic	0.28	0.35	0.82	-0.52	0.35	-1.49	0.20	0.38	0.53
PhD	**-0.83**	**0.28**	**-2.96**	**0.49**	**0.28**	**1.73**	0.46	0.30	1.51
USA	0.00	0.26	-0.01	0.14	0.27	0.53	-0.22	0.29	-0.76
Age	0.01	0.01	0.70	-0.01	0.01	-0.70	-0.02	0.01	-1.62
Children	-0.03	0.11	-0.26	0.15	0.11	1.37	**0.30**	**0.12**	**2.47**
Male	-0.20	0.24	-0.83	**0.53**	**0.24**	**2.16**	0.15	0.26	0.58
$\chi 2$ (p-value)	61.93 (<0.001)			39.32 (0.013)			48.81 (0.001)		
Sample size	320			319			319		
Average Consensus Rank	36			34			7		

Table 3. Logistic Regression Determinants of Agreement (Group 6)									
Variable	[17] The management of resource use should aim to meet the needs of the present generation without compromising the ability of future generations to meet their own needs.			[18] Population growth inevitably degrades the environment.			[19] There exists a maximum level of economic growth that can be sustained without undermining the resource base upon which it depends.		
	83% Agree			40% Agree			48% Agree		
	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat
Intercept 5	0.34	0.79	0.43	-3.74	0.80	-4.67	-2.43	0.76	-3.20
Intercept 4	2.89	0.81	3.56	-0.99	0.76	-1.30	-0.52	0.75	-0.69
Intercept 3	3.75	0.83	4.54	0.10	0.76	0.13	0.54	0.75	0.72
Intercept 2	4.65	0.86	5.44	2.36	0.78	3.03	2.15	0.76	2.82
Environmental Concern	0.16	0.12	1.32	0.02	0.11	0.17	0.18	0.11	1.62
Natural Resource Concern	**0.40**	**0.12**	**3.32**	**0.25**	**0.11**	**2.18**	0.02	0.11	0.17
Worse since 2000	0.26	0.28	0.95	-0.02	0.26	-0.06	-0.15	0.26	-0.57
Worse in 2025	-0.11	0.28	-0.38	**1.06**	**0.27**	**3.89**	0.16	0.26	0.61
Liberal	0.05	0.25	0.21	**0.52**	**0.24**	**2.14**	0.15	0.24	0.63
ln(Citations)	-0.03	0.07	-0.48	-0.05	0.07	-0.75	-0.04	0.07	-0.53
Teaching	**-0.88**	**0.34**	**-2.58**	-0.49	0.32	-1.52	**-0.58**	**0.32**	**-1.82**
Research	0.44	0.50	0.88	0.07	0.47	0.14	0.51	0.46	1.10
Policy	-0.43	0.27	-1.60	-0.18	0.26	-0.69	-0.34	0.25	-1.34
Administration	0.02	0.27	0.08	**-0.51**	**0.26**	**-1.93**	-0.34	0.26	-1.33
JEL Q0 General	0.08	0.33	0.25	0.45	0.32	1.44	0.38	0.31	1.23
JEL Q1 Agriculture	0.30	0.29	1.05	-0.18	0.27	-0.66	0.29	0.27	1.07
JEL Q2 Renewable	0.11	0.25	0.45	0.04	0.24	0.15	0.14	0.23	0.58
JEL Q3 Nonrenewable	-0.41	0.32	-1.28	0.23	0.31	0.75	0.22	0.30	0.74
JEL Q4 Energy	0.37	0.25	1.46	-0.08	0.24	-0.34	-0.13	0.24	-0.56
JEL Q5 Environmental	-0.04	0.30	-0.13	0.15	0.29	0.52	-0.11	0.29	-0.40
Academic	0.43	0.37	1.18	0.41	0.35	1.17	**0.58**	**0.34**	**1.68**
PhD	0.04	0.30	0.15	-0.14	0.28	-0.51	**-0.52**	**0.28**	**-1.87**
USA	-0.16	0.28	-0.58	-0.41	0.27	-1.53	**-0.57**	**0.26**	**-2.18**
Age	**-0.03**	**0.01**	**-2.45**	0.01	0.01	1.25	**0.03**	**0.01**	**2.29**
Children	0.09	0.11	0.82	**-0.34**	**0.11**	**-3.10**	-0.16	0.11	-1.48
Male	-0.13	0.25	-0.51	-0.01	0.24	-0.04	0.08	0.24	0.35
$\chi 2$ (p-value)	43.41 (0.004)			62.49 (<0.001)			33.58 (0.054)		
Sample size	326			326			324		
Average Consensus Rank	18			29			33		

Table 3. Logistic Regression Determinants of Agreement (Group 7)												
Variable	[20] The U.S. should ban genetically modified crops.			[21] Laws mandating municipal curbside recycling should be eliminated.			[22] The U.S. should increase energy taxes.			[23] Reducing the regulatory power of the Environmental Protection Agency (EPA) would improve the economic efficiency of the U.S. economy.		
	62% Disagree			66% Disagree			84% Agree			80% Disagree		
	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat
Intercept 5	-2.64	0.81	-3.28	-4.90	0.94	-5.22	-1.49	0.81	-1.82			
Intercept 4	-1.03	0.76	-1.35	-2.78	0.80	-3.47	0.94	0.81	1.16	-3.41	0.82	-4.15
Intercept 3	0.52	0.76	0.68	-0.85	0.78	-1.09	2.86	0.86	3.32	-2.12	0.80	-2.65
Intercept 2	2.11	0.77	2.76	1.43	0.79	1.82	3.86	0.95	4.05	-0.04	0.79	-0.05
Environmental Concern	**0.32**	**0.11**	**2.84**	**-0.43**	**0.12**	**-3.67**	**-0.33**	**0.12**	**-2.70**	0.14	0.12	1.23
Natural Resource Concern	0.13	0.11	1.14	**-0.27**	**0.12**	**-2.33**	**0.42**	**0.12**	**3.37**	**-0.51**	**0.12**	**-4.21**
Worse since 2000	0.27	0.26	1.02	-0.07	0.27	-0.24	0.03	0.28	0.09	0.41	0.28	1.48
Worse in 2025	0.20	0.27	0.74	-0.29	0.28	-1.07	0.14	0.28	0.49	-0.07	0.28	-0.24
Liberal	-0.05	0.24	-0.20	**-0.64**	**0.25**	**-2.55**	**0.90**	**0.26**	**3.44**	**-0.76**	**0.25**	**-3.00**
ln(Citations)	**-0.17**	**0.07**	**-2.45**	0.07	0.07	1.01	0.05	0.07	0.72	0.00	0.07	0.01
Teaching	0.02	0.32	0.07	-0.18	0.33	-0.55	0.24	0.34	0.71	-0.53	0.33	-1.60
Research	0.55	0.47	1.17	0.27	0.49	0.55	-0.34	0.49	-0.69	0.39	0.49	0.81
Policy	-0.31	0.26	-1.18	0.17	0.26	0.63	**0.67**	**0.28**	**2.34**	0.13	0.27	0.48
Administration	-0.06	0.26	-0.21	0.19	0.27	0.71	**0.61**	**0.29**	**2.12**	**-0.51**	**0.28**	**-1.85**
JEL Q0 General	-0.12	0.31	-0.40	0.07	0.32	0.22	-0.35	0.33	-1.04	**0.65**	**0.32**	**2.05**
JEL Q1 Agriculture	**-0.65**	**0.28**	**-2.35**	0.11	0.28	0.40	**-0.81**	**0.29**	**-2.79**	0.33	0.28	1.18
JEL Q2 Renewable	0.00	0.24	0.01	0.27	0.24	1.12	**-0.52**	**0.26**	**-2.02**	0.21	0.25	0.86
JEL Q3 Nonrenewable	-0.02	0.31	-0.06	-0.08	0.32	-0.27	0.22	0.34	0.66	0.03	0.32	0.08
JEL Q4 Energy	0.02	0.24	0.10	-0.04	0.25	-0.17	0.28	0.26	1.08	0.17	0.25	0.67
JEL Q5 Environmental	**0.55**	**0.30**	**1.86**	0.11	0.30	0.37	0.07	0.31	0.23	0.07	0.30	0.24
Academic	**-0.60**	**0.35**	**-1.73**	0.27	0.36	0.76	-0.10	0.37	-0.27	0.07	0.36	0.20
PhD	-0.05	0.28	-0.19	**0.53**	**0.29**	**1.80**	0.31	0.30	1.02	0.37	0.29	1.27
USA	**-0.57**	**0.26**	**-2.15**	**0.60**	**0.28**	**2.18**	0.43	0.28	1.52	-0.39	0.27	-1.41
Age	0.00	0.01	-0.07	**-0.02**	**0.01**	**-1.78**	-0.01	0.01	-0.88	0.01	0.01	0.69
Children	-0.12	0.11	-1.13	-0.18	0.11	-1.61	0.05	0.12	0.45	0.01	0.11	0.08
Male	-0.29	0.24	-1.23	0.22	0.25	0.88	0.15	0.26	0.56	0.23	0.25	0.90
$\chi 2$ (p-value)	62.46 (<0.001)			62.13 (<0.001)			74.63 (<0.001)			55.31 (<0.001)		
Sample size	326			322			326			324		
Average Consensus Rank	28			17			13			16		

Table 3. Logistic Regression Determinants of Agreement (Group 8)									
Variable	[24] Economic growth is needed in order to protect the environment.			[25] Economic growth always harms the environment.			[26] We worry too much about the future of the environment and not enough about prices and jobs today.		
	46% Agree			78% Disagree			84% Disagree		
	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat
Intercept 5	-3.20	0.80	-4.01	-4.89	0.92	-5.31			
Intercept 4	-0.18	0.76	-0.24	-3.30	0.81	-4.07	-4.10	0.91	-4.49
Intercept 3	1.31	0.76	1.72	-1.68	0.79	-2.14	-1.57	0.81	-1.92
Intercept 2	3.45	0.80	4.29	0.66	0.78	0.85	1.27	0.81	1.56
Environmental Concern	-0.06	0.11	-0.56	**0.21**	**0.12**	**1.82**	-0.16	0.12	-1.36
Natural Resource Concern	**-0.20**	**0.12**	**-1.72**	0.12	0.12	0.99	**-0.28**	**0.12**	**-2.30**
Worse since 2000	0.02	0.27	0.08	0.22	0.27	0.81	0.20	0.28	0.70
Worse in 2025	**-0.67**	**0.27**	**-2.43**	**0.50**	**0.28**	**1.78**	**-0.53**	**0.29**	**-1.85**
Liberal	-0.28	0.25	-1.12	-0.04	0.25	-0.17	**-0.86**	**0.26**	**-3.25**
ln(Citations)	0.06	0.07	0.90	0.06	0.07	0.87	0.01	0.07	0.15
Teaching	-0.15	0.32	-0.47	-0.33	0.33	-1.01	**-0.62**	**0.35**	**-1.78**
Research	-0.08	0.48	-0.16	-0.17	0.48	-0.35	0.01	0.50	0.01
Policy	-0.33	0.26	-1.27	-0.28	0.27	-1.06	-0.07	0.27	-0.25
Administration	-0.35	0.26	-1.33	-0.06	0.27	-0.23	0.03	0.28	0.09
JEL Q0 General	**0.70**	**0.32**	**2.17**	0.26	0.32	0.80	0.54	0.33	1.63
JEL Q1 Agriculture	-0.10	0.27	-0.37	-0.37	0.28	-1.32	0.34	0.29	1.18
JEL Q2 Renewable	-0.08	0.24	-0.35	**0.42**	**0.25**	**1.71**	0.23	0.25	0.92
JEL Q3 Nonrenewable	-0.05	0.31	-0.16	-0.43	0.32	-1.33	0.46	0.33	1.39
JEL Q4 Energy	0.24	0.24	0.97	0.31	0.25	1.26	0.04	0.26	0.17
JEL Q5 Environmental	-0.22	0.30	-0.72	-0.06	0.30	-0.21	0.12	0.31	0.38
Academic	-0.23	0.35	-0.66	0.40	0.36	1.10	**0.76**	**0.38**	**2.02**
PhD	0.07	0.28	0.24	-0.34	0.29	-1.18	0.42	0.30	1.38
USA	0.30	0.27	1.13	**-0.58**	**0.27**	**-2.12**	-0.30	0.28	-1.07
Age	0.01	0.01	1.07	0.02	0.01	1.45	0.00	0.01	-0.17
Children	**0.21**	**0.11**	**1.91**	-0.04	0.11	-0.38	-0.15	0.12	-1.27
Male	-0.40	0.25	-1.62	**-0.41**	**0.25**	**-1.65**	0.11	0.26	0.44
χ 2 (p-value)	36.41 (0.027)			37.26 (0.022)			56.24 (< 0.001)		
Sample size	325			327			327		
Average Consensus Rank	23			14			3		

Table 3. Logistic Regression Determinants of Agreement (Group 9)															
Variable	[27] New technologies will surely come along to solve environmental problems before they get out of hand.			[28] Some pollution is inevitable if we are going to continue to make improvements in our standard of living.			[29] If business is forced to spend a lot of money on environmental protection, it won't be able to invest in research and development to keep us competitive in the international market.			[30] I just don't have the time to worry about how all of my actions affect the environment.			[31] I would be embarrassed if people I know caught me not recycling my trash.		
	47% Disagree			75% Agree			73% Disagree			63% Disagree			43% Agree		
	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat
Intercept 5	-4.30	1.06	-4.07	-1.11	0.79	-1.40	-4.15	1.30	-3.19	-3.57	0.84	-4.25	-2.51	0.76	-3.30
Intercept 4	-0.42	0.76	-0.55	1.48	0.79	1.87	-1.03	0.81	-1.27	-0.92	0.77	-1.20	-0.34	0.75	-0.45
Intercept 3	1.25	0.76	1.64	2.32	0.80	2.90	0.76	0.79	0.97	-0.28	0.77	-0.36	0.57	0.75	0.75
Intercept 2	3.65	0.79	4.60	4.68	0.91	5.17	3.40	0.82	4.16	1.70	0.77	2.20	2.16	0.76	2.85
Environmental Concern	-0.12	0.11	-1.06	0.02	0.12	0.15	-0.17	0.12	-1.49	**-0.31**	**0.11**	**-2.77**	0.18	0.11	1.61
Natural Resource Concern	**-0.38**	**0.12**	**-3.24**	0.13	0.12	1.10	-0.12	0.12	-1.05	-0.18	0.11	-1.56	**0.26**	**0.11**	**2.31**
Worse since 2000	-0.18	0.26	-0.70	-0.43	0.28	-1.57	-0.44	0.28	-1.60	-0.08	0.26	-0.31	0.26	0.26	1.02
Worse in 2025	-0.43	0.27	-1.59	**-0.63**	**0.28**	**-2.21**	-0.22	0.28	-0.77	0.19	0.27	0.69	-0.10	0.26	-0.38
Liberal	-0.29	0.24	-1.19	-0.13	0.25	-0.53	**-0.43**	**0.25**	**-1.67**	-0.32	0.24	-1.30	**0.90**	**0.24**	**3.68**
ln(Citations)	0.04	0.07	0.54	0.07	0.07	0.98	-0.05	0.07	-0.68	-0.02	0.07	-0.26	0.02	0.07	0.37
Teaching	-0.17	0.32	-0.53	0.13	0.33	0.40	0.10	0.34	0.29	0.15	0.32	0.45	**-0.83**	**0.32**	**-2.58**
Research	-0.38	0.47	-0.80	0.00	0.51	0.00	-0.22	0.49	-0.44	0.04	0.48	0.07	0.22	0.46	0.47
Policy	-0.20	0.26	-0.76	0.17	0.27	0.62	-0.22	0.27	-0.81	-0.01	0.26	-0.05	-0.04	0.25	-0.16
Administration	-0.19	0.26	-0.71	0.17	0.27	0.63	0.13	0.27	0.49	0.26	0.26	0.98	0.13	0.26	0.51
JEL Q0 General	0.39	0.31	1.23	-0.10	0.32	-0.30	0.50	0.32	1.53	-0.20	0.31	-0.65	0.00	0.31	0.00
JEL Q1 Agriculture	0.42	0.27	1.54	-0.17	0.28	-0.59	0.14	0.28	0.50	0.24	0.27	0.90	-0.22	0.27	-0.80
JEL Q2 Renewable	0.25	0.24	1.06	**-0.42**	**0.25**	**-1.67**	0.28	0.25	1.14	-0.11	0.24	-0.47	0.01	0.23	0.03
JEL Q3 Nonrenewable	0.34	0.31	1.08	0.27	0.32	0.84	0.00	0.32	-0.01	-0.50	0.31	-1.61	-0.39	0.31	-1.28
JEL Q4 Energy	0.01	0.24	0.02	-0.09	0.25	-0.34	-0.04	0.25	-0.17	0.24	0.24	1.02	0.23	0.24	0.96
JEL Q5 Environmental	0.40	0.29	1.35	0.26	0.30	0.87	-0.35	0.30	-1.18	-0.14	0.29	-0.49	0.14	0.29	0.48
Academic	-0.17	0.35	-0.49	0.15	0.36	0.42	-0.43	0.36	-1.19	0.28	0.35	0.80	0.28	0.34	0.80
PhD	0.13	0.28	0.46	**0.63**	**0.30**	**2.13**	0.24	0.30	0.80	**0.52**	**0.28**	**1.81**	-0.38	0.28	-1.37
USA	**-0.46**	**0.27**	**-1.72**	**0.45**	0.28	1.64	-0.04	0.28	-0.14	0.08	0.26	0.32	**-0.86**	**0.27**	**-3.23**
Age	-0.01	0.01	-1.15	**-0.03**	**0.01**	**-2.55**	-0.01	0.01	-0.97	**-0.02**	**0.01**	**-1.68**	0.01	0.01	1.00
Children	0.09	0.11	0.84	0.00	0.11	0.03	0.02	0.11	0.18	-0.11	0.11	-1.02	0.08	0.11	0.70
Male	0.11	0.24	0.44	**0.62**	**0.25**	**2.43**	-0.08	0.25	-0.32	0.26	0.24	1.05	**-0.49**	**0.24**	**-2.05**

χ 2 (p-value)	39.93 (0.016)	47.86 (0.001)	26.75 (0.22)	37.52 (0.021)	62.66 (< 0.001)
Sample size	326	328	327	325	327
Average Consensus Rank	21	19	11	31	35

Table 3. Logistic Regression Determinants of Agreement (Group 10)															
Variable	[32] I am very confused about what's good and what's bad for the environment.			[33] I feel good when I take steps to help the environment.			[34] A manufacturer that voluntarily reduces the environmental impact of its production process and products is making a smart business decision.			[35] Local governments should provide more incentives for people to recycle.			[36] We should wait until the economy gets better before we make the environment a major policy priority.		
	90% Disagree			86% Agree			58% Neutral			56% Agree			88% Disagree		
	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat	Coeff.	S.E.	t-stat
Intercept 5	-4.48	1.05	-4.28	-0.15	0.84	-0.18	-1.92	0.83	-2.32	-1.02	0.79	-1.29	-5.25	0.98	-5.35
Intercept 4	-2.25	0.82	-2.73	3.00	0.85	3.51	0.26	0.81	0.31	1.81	0.80	2.26	-4.12	0.87	-4.73
Intercept 3	-0.79	0.80	-0.98	5.92	1.03	5.73	3.63	0.84	4.32	3.94	0.82	4.80	-2.67	0.83	-3.22
Intercept 2	2.04	0.81	2.52	7.02	1.34	5.25	5.89	1.01	5.84	5.58	0.87	6.41	-0.03	0.81	-0.04
Environmental Concern	0.06	0.12	0.47	**0.42**	**0.12**	**3.37**	**0.21**	**0.12**	**1.73**	**0.71**	**0.12**	**5.82**	**-0.20**	**0.12**	**-1.66**
Natural Resource Concern	**-0.27**	**0.12**	**-2.20**	**0.33**	**0.13**	**2.61**	0.04	0.12	0.29	0.19	0.12	1.60	**-0.23**	**0.12**	**-1.85**
Worse since 2000	-0.39	0.28	-1.40	**0.53**	**0.29**	**1.82**	-0.07	0.29	-0.24	**0.56**	**0.27**	**2.05**	-0.29	0.28	-1.02
Worse in 2025	**0.79**	**0.29**	**2.75**	-0.44	0.30	-1.48	-0.08	0.29	-0.26	-0.04	0.28	-0.13	-0.20	0.28	-0.69
Liberal	-0.11	0.26	-0.41	0.22	0.27	0.83	-0.32	0.26	-1.20	-0.27	0.25	-1.06	-0.35	0.26	-1.36
ln(Citations)	0.03	0.07	0.44	0.03	0.08	0.37	-0.05	0.07	-0.67	0.03	0.07	0.44	-0.02	0.07	-0.32
Teaching	-0.35	0.35	-0.99	0.06	0.36	0.16	-0.13	0.35	-0.37	-0.44	0.34	-1.28	-0.12	0.34	-0.34
Research	0.04	0.50	0.08	-0.68	0.53	-1.29	-0.51	0.50	-1.02	-0.30	0.49	-0.62	0.47	0.51	0.92
Policy	**0.60**	**0.28**	**2.17**	0.17	0.29	0.60	0.08	0.28	0.28	-0.41	0.27	-1.55	-0.17	0.27	-0.63
Administration	-0.01	0.28	-0.03	0.25	0.29	0.85	-0.09	0.29	-0.32	-0.14	0.27	-0.50	0.02	0.28	0.06
JEL Q0 General	**0.58**	**0.33**	**1.75**	0.19	0.34	0.57	-0.30	0.34	-0.87	-0.19	0.32	-0.59	0.56	0.33	1.70
JEL Q1 Agriculture	0.26	0.29	0.90	0.15	0.30	0.49	0.22	0.29	0.75	0.20	0.28	0.69	-0.11	0.29	-0.39
JEL Q2 Renewable	0.06	0.25	0.24	-0.06	0.26	-0.24	-0.20	0.26	-0.78	0.15	0.25	0.60	0.22	0.25	0.86
JEL Q3 Nonrenewable	-0.01	0.33	-0.03	-0.19	0.34	-0.55	0.23	0.34	0.69	**-0.90**	**0.32**	**-2.82**	0.27	0.33	0.81
JEL Q4 Energy	**-0.57**	**0.26**	**-2.20**	-0.25	0.26	-0.96	-0.13	0.26	-0.49	**-0.56**	**0.25**	**-2.24**	0.31	0.25	1.22
JEL Q5 Environmental	-0.37	0.31	-1.19	0.07	0.32	0.20	0.24	0.32	0.77	0.23	0.30	0.75	-0.42	0.31	-1.37
Academic	0.61	0.38	1.62	**-0.73**	**0.39**	**-1.86**	-0.25	0.37	-0.66	0.34	0.36	0.94	**0.63**	**0.38**	**1.69**
PhD	0.25	0.31	0.82	-0.22	0.31	-0.69	0.04	0.31	0.12	-0.45	0.30	-1.51	-0.14	0.30	-0.45
USA	-0.38	0.29	-1.32	0.13	0.29	0.44	**-0.50**	**0.29**	**-1.73**	**-0.74**	**0.28**	**-2.63**	-0.21	0.28	-0.75
Age	**-0.02**	**0.01**	**-1.95**	0.00	0.01	-0.12	**0.02**	**0.01**	**1.76**	-0.01	0.01	-0.65	0.01	0.01	0.70
Children	-0.10	0.12	-0.87	0.15	0.12	1.29	0.08	0.12	0.67	0.17	0.11	1.50	0.02	0.12	0.17
Male	0.04	0.26	0.15	-0.33	0.27	-1.24	**-0.81**	**0.26**	**-3.08**	**-0.45**	**0.25**	**-1.79**	0.27	0.26	1.04
$\chi 2$ (p-value)	37.78 (0.019)			54.07 (< 0.0001)			27.11 (0.207)			107.17 (<0.001)			41.97 (0.006)		
Sample size	325			324			325			325			327		

Average Consensus Rank	9	2	5	19	8