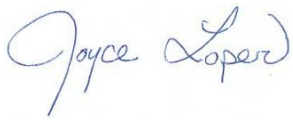
NP 211 Water Availability and Watershed Management

Christina Woods, Program Analyst
Office of Scientific Quality Review

_____ 9/4/2012____
Donald P. Knowles, Scientific Quality Review Officer — Date
(October 2011 – April 2012)



_____ August 24, 2012
Joyce Loper, Scientific Quality Review Officer — Date
(January 2012-December 2013)

_____ August 22, 2012
Michael S. Strauss, Peer Review Program Coordinator — Date

Office of Scientific Quality Review
Agricultural Research Service
United States Department of Agriculture

Introduction

This Panel Report provides the background on the 2012 National Program (NP) Water Availability and Watershed Management Panel Review. The project plans reviewed by these panels were applicable to the mission of the National Program to "*(1) conduct fundamental and applied research on the processes that control water availability and quality for the health and economic growth of the American people; and (2) develop new and improved technologies for managing the Nation's agricultural water resources. These advances in knowledge and technologies will provide producers, action agencies, local communities, and resource advisors with the practices, tools, models, and decision support systems they need to improve water conservation and water use efficiency in agriculture, enhance water quality, protect rural and urban communities from the ravages of droughts and floods, improve agricultural and urban watersheds, and prevent the degradation of riparian areas, wetlands, and stream corridors. The rationale for this program is that water is fundamental to life and is a basic requirement for virtually all of our agricultural, industrial, urban, and recreational activities, as well as the sustained health of the natural environment.*"

In collaboration with the Office of Scientific Quality Review (OSQR), and the National Program Leaders, Mark Walbridge and Charles Walthall, divided 37 projects into twelve panels. After considering several candidates, Dr. Donald Knowles, Scientific Quality Review Officer (SQRO), appointed a chair for the eleven panels (Table 1).

Dr. Michael Strauss, Peer Review Program Coordinator, and Dr. Knowles presented an orientation to the Panel Chairs. Dr. Knowles subsequently approved the candidate panelists selected by each Chair. The approvals took into account conflicts of interest and followed guidelines for diversifying panel composition geographically, institutionally, and according to gender and ethnicity. Panelists demonstrated a recognizable level of knowledge of recent research within their respective fields of water availability and watershed management. The panels received a telephone-web-based orientation. The Office of National Programs (ONP) provided an overview of the NP 211 Water Availability and Watershed Program. All panels convened online.

Table 1. Breakdown of the Water Availability and Watershed Management Panels

Panel	Panel Chair	Panel Meeting Date	Number of Panelists	Number of Projects Reviewed
Panel 1 – Irrigation	Dr. George Vellidis, Professor, Dept Biol & Agr Engr, Univ Georgia, Tifton, GA	November 30, 2011	6	3*
Panel 2 – Water Productivity at Multiple Scales	Dr. Dan Thomas, Professor & Head, Dept Biosys & Agr Engr, Oklahoma State Univ, Stillwater, OK	October 26, 2011	4	3
Panel 3 – Dryland/Rainfed and Drainage Water Management	Dr. Daniel Devlin, Director, Kansas Ctr Agr Res & the Environ, Kansas State Univ, Manhattan, KS	December 14, 2011	5	4
Panel 4 – Water Reuse	Dr. James Dobrowolski, National Program Leader, USDA, NIFA, Inst Bioenergy, Climate & Environ, Div Environ Sci, Washington, DC	December 12, 2011	5	4
Panel 5 – Water/Water Quality Processes, Management, and Control	Dr. Stephen Hamilton, Professor, Kellogg Biol Stn, Michigan State Univ, Hickory Corners, MI	November 21, 2011	4	3
Panel 6 – Sediment and Water Quality in Agricultural Watersheds	Dr. Mark Grismer, Professor, Depts Land, Air & Water Res; Biol & Agr Engr, Univ California, Sebastopol, CA	December 13, 2011	5	3
Panel 7 – Water Treatment and Control Technologies	Dr. Thomas Franti, Assoc Professor, Dept Biol Sys Engr, Univ Nebraska, Lincoln, NE	November 7, 2011	5	4
Panel 8 – Managing Agricultural Water Quality	Dr. Rafael Munoz-Carpena, Professor, Dept Agr Biol Engr, Univ Florida, Gainesville, FL	December 9, 2011	4	2*
Panel 9 – Water Resource Management and Conservation	Dr. James Dobrowolski, National Program Leader, USDA, NIFA, Inst Bioenergy, Climate & Environ, Div Environ Sci, Washington, DC	December 8, 2011	5	2*
Panel 10 – Managing Agricultural Watersheds and Landscapes	Dr. Melba Crawford, Assoc Dean for Egr Res, Purdue Univ, West Lafayette, IN	December 21, 2011	6	5
Panel 11 – Water and Soil Conservation	Dr. Michael O'Neill, National Program Leader, USDA, NIFA, Inst Bioenergy, Climate & Environ, Div Environ Sci, Washington, DC	December 2, 2011	4	3
Panel 12 – Salt Tolerance	Dr. Donald Knowles, SQRO	N/A	3	1

*Panels had projects that were terminated before review.

Panel Review Results

Along with the Panel's written recommendations, OSQR sends each Area Director a worksheet that shows each reviewer's judgment of the degree of revision their project plan requires. This judgment is referred to as an "action class". The action classes of the panelists are also converted to a numerical equivalent (score), averaged, and a final action class rating is assigned.

Scientists are required to revise their project plans as appropriate and submit a formal statement to OSQR through their Area Director demonstrating their response to the Panel's recommendations. The project plans are implemented following approval and certification from the SQRO.

If the action class is:

> **No Revision Required (score: 8).** An excellent plan; no revision is required, but minor changes to the project plan may be suggested.
>
> **Minor Revision Required (score: 6).** The project plan is feasible as written, and requires only minor clarification or revision to increase quality to a higher level.
>
> **Moderate Revision Required (score: 4).** The project plan is basically feasible, but requires changes or revision to the work on one or more objectives, perhaps involving alteration of the experimental approaches in order to increase quality to a higher level and may need some rewriting for greater clarity.
>
> **Major Revision Required (score: 2).** There are significant flaws in the experimental design and/or approach or lack of clarity which hampers understanding. Significant revision is needed.
>
> **Not Feasible (score: 0).** The project plan, as presented, has major flaws or deficiencies, and cannot be simply revised. Deficiencies exist in approach, experimental design, presentation, or expertise which makes it unlikely to succeed.

For plans receiving one of the first three Action Classes (No Revision, Minor Revision, and Moderate Revision) scientists respond in writing to panel comments, revise their project plan as appropriate, and submit the revised plan and responses to OSQR through their Area Office. These are revised by the SQR Officer at OSQR and, once they are satisfied that all review concerns have been satisfactorily addressed, the project plan is certified and may be implemented.

When the Action Class is Major Revision or Not Feasible, responses and revised plans are provided as above, but must then be re-reviewed by the original review panel that provide a second set of narrative comments and Action Class based on the revised plan. If the re-review action class is no revision, minor or moderate revision the project plan may be implemented after receipt of satisfactory response and SQRO certification, as described above. Plans receiving major revision or not feasible scores on re-review are deemed to have failed. The action class and consensus comments are provided to the Area but there is no further option for revision of such plans. Low scoring or failed plans may be terminated, reassigned, or restructured, at the discretion of the Area or Office of National Programs.

NP 211 Program Review Overview

The following is a summary of the comments made in the panel debriefings of the third cycle. The general consensus among panels was that this review process gave them a better understanding of ARS and left a favorable impression. They appreciate that ARS takes on these long-term projects where many university researchers may not be able to adequately address these problems in a shorter timeframe.

For those proposals that were poorly written, they suggest mentoring and providing examples of well-written plans.

Table 2 shows the initial and final scores for the third cycle in terms of percentages. All but one project passed review. The overall average score for all plans was 5.15 which is in the Minor Revision range.

Table 3 shows the initial and final scores for the first, second and third cycles expressed as percentages. The first cycle scored higher with an average final score of 5.29 (Minor Revision). All three cycles had one plan that did not pass final review.

Table 4 shows the initial and final scores for the in-person and online panels over all three review cycles. There is not a marked difference among the average score for the in person panels (4.79; Moderate Revision) and the online panels (4.76; Moderate Revision) in Initial review. The average final scores improved but again there was not a marked difference between the in person (5.24; Minor Revision) and online (5.15; Minor Revision) final scores.

Figures 1 and 2 present the distribution of scores for the Water Availability and Watershed Management Panels for the score versus panel size. In Figure 1 there appears to be a suggestion that scores were lower, on average, from smaller panels. The low number of plans overall, however, makes it unlikely that this is significant. Further, when the scores for all three review cycles

are included in Figure 2, the trend is less clear and when all scores from the third cycle (Figure 3) are included the trend is clearly insignificant.

Figure 4 shows the distribution of scores for the number of scientists versus score for the Third Cycle panels. It shows that there is no relationship between the score received and the number of scientists on a plan.

Figures 5 and 6 show the distribution of the Water Availability and Watershed Management Panels initial and final scores assigned by the First (2001), Second (2007) and Third (2012) Cycle. The first cycle outscored the second and third cycles in the initial score (5.29, 4.31 and 4.76, respectively) and final score (5.49, 5.00 and 5.15, respectively) reviews. Action classes are determined from scores as follows:

Action Class	Score Range
No Revision Needed	> 7.0
Minor Revision Needed	5.1-6.9
Moderate Revision Needed	3.1-5.0
Major Revision Needed	1.1-3.0
Not Feasible	≤ 1.0

Table 2. Initial and Final Scores for the Third Cycle (2012) Distribution for the NP 211 Water Availability and Watershed Management Panels Broken Down by Percentages

	Initial Review						Final Review					
Third Cycle, 2012	% No Rev	% Min Rev	% Mod Rev	% Maj Rev	% Not Feas	Avg Initial Score	% No Rev	% Min Rev	% Mod Rev	% Maj Rev	% Not Feas	Avg Final Score
Panel 1 - Irrigation (3)	33.3%	33.3%	33.3%	0.0%	0.0%	5.67	33.3%	33.3%	33.3%	0.0%	0.0%	5.67
Panel 2 - Water Productivity at Multiple Scales (3)	0.0%	33.3%	33.3%	33.3%	0.0%	4.33	33.3%	33.3%	33.3%	0.0%	0.0%	5.94
Panel 3 - Dryland/Rainfed & Drainage Water Management (4)	0.0%	75.0%	25.0%	0.0%	0.0%	5.3	0.0%	75.0%	25.0%	0.0%	0.0%	5.3
Panel 4 - Water Reuse (4)	0.0%	25.0%	75.0%	0.0%	0.0%	4.6	0.0%	25.0%	75.0%	0.0%	0.0%	4.6
Panel 5 - Water/Water Quality Processes, Management, & Control (3)	0.0%	33.3%	66.7%	0.0%	0.0%	5	0.0%	33.3%	66.7%	0.0%	0.0%	5
Panel 6 - Sediment & Water Quality in Agricultural Watersheds (3)	0.0%	33.3%	66.7%	0.0%	0.0%	4.4	0.0%	33.3%	66.7%	0.0%	0.0%	4.4
Panel 7 - Water Treatment & Control Technologies (4)	0.0%	50.0%	0.0%	50.0%	0.0%	4.3	25.0%	50.0%	0.0%	25.0%	0.0%	5
Panel 8 - Managing Agricultural Water Quality (2)	0.0%	50.0%	50.0%	0.0%	0.0%	4.75	0.0%	50.0%	50.0%	0.0%	0.0%	4.75
Panel 9 - Water Resource Management & Conservation (2)	0.0%	50.0%	50.0%	0.0%	0.0%	4.8	0.0%	50.0%	50.0%	0.0%	0.0%	4.8
Panel 10 - Managing Agricultural Watersheds & Landscapes (5)	0.0%	40.0%	60.0%	0.0%	0.0%	4.87	0.0%	40.0%	60.0%	0.0%	0.0%	4.87
Panel 11 - Water & Soil Conservation (3)	0.0%	66.7%	0.0%	33.3%	0.0%	4.61	0.0%	100.0%	0.0%	0.0%	0.0%	5.94
Panel 12 - Salt Tolerance (1)	0.0%	0.0%	100.0%	0.0%	0.0%	4	0.0%	0.0%	100.0%	0.0%	0.0%	4
Total	2.8%	40.8%	46.7%	9.7%	0.0%	4.76	7.6%	43.6%	46.7%	2.1%	0.0%	5.15

Table 3. Initial and Final Scores for All Cycles Expressed as Percentages for the NP 211 Water Availability and Watershed Management Panels

	Initial Review						Final Review					
	% No Rev	% Min Rev	% Mod Rev	% Maj Rev	% Not Feas	Avg Initial Score	% No Rev	% Min Rev	% Mod Rev	% Maj Rev	% Not Feas	Avg Final Score
First Cycle, 2001 (n=47)	17.0%	42.6%	31.9%	8.5%	0.0%	5.29	19.1%	44.7%	34.0%	0.0%	2.1%	5.49
Second Cycle, 2007 (n=48)	0.0%	29.2%	47.9%	20.8%	2.1%	4.31	2.1%	47.9%	47.9%	0.0%	2.1%	5.00
Third Cycle, 2011 (n=37)	2.7%	43.2%	43.2%	10.8%	0.0%	4.76	8.1%	45.9%	43.2%	2.7%	0.0%	5.15

Table 4. In Person vs. Online Scores for the NP 211 Water Availability and Watershed Management Panels

	Initial Review						Final Review					
	% No Rev	% Min Rev	% Mod Rev	% Maj Rev	% Not Feas	Avg Initial Score	% No Rev	% Min Rev	% Mod Rev	% Maj Rev	% Not Feas	Avg Final Score
In Person (n=95)	8.4%	35.8%	40.0%	14.7%	1.1%	4.79	10.5%	46.3%	41.1%	0.0%	2.1%	5.24
Online (n=37)	2.7%	43.2%	43.2%	10.8%	0.0%	4.76	8.1%	45.9%	43.2%	2.7%	0.0%	5.15

Figure 1. Panel Size vs. Score for the Third Cycle of the NP 211 Water Availability and Watershed Management Panels

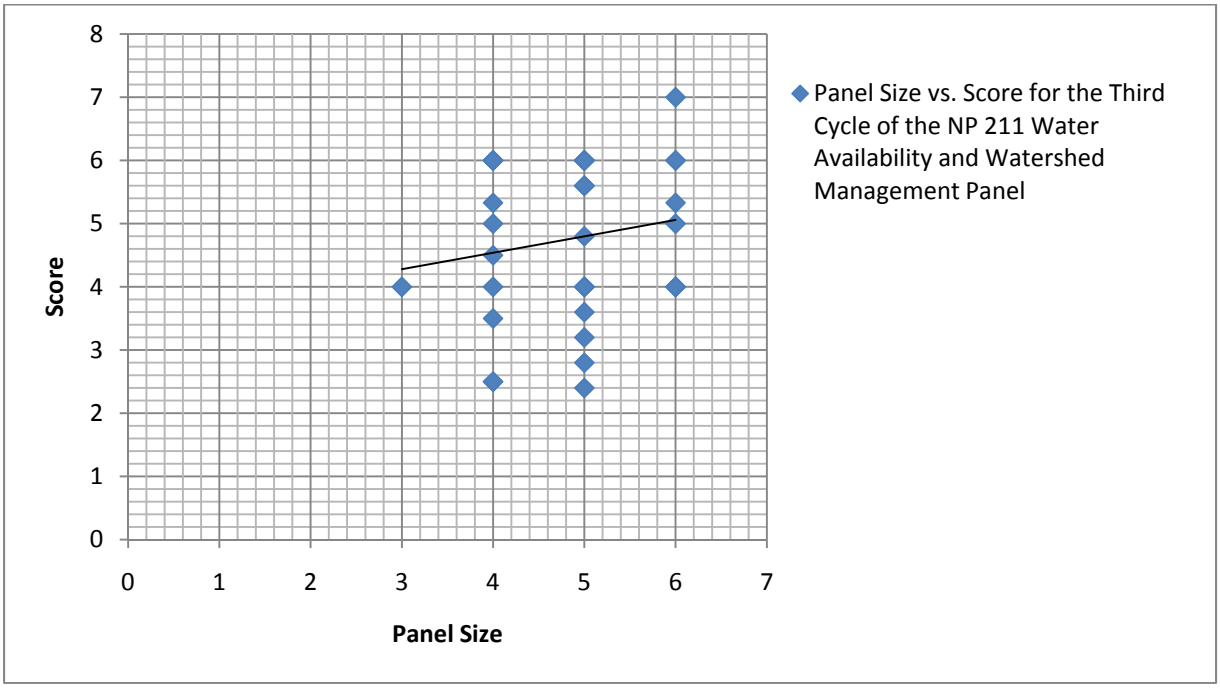


Figure 2. Panel Size vs. Score for all Three Cycles of the NP 211 Water Availability and Watershed Management Panels

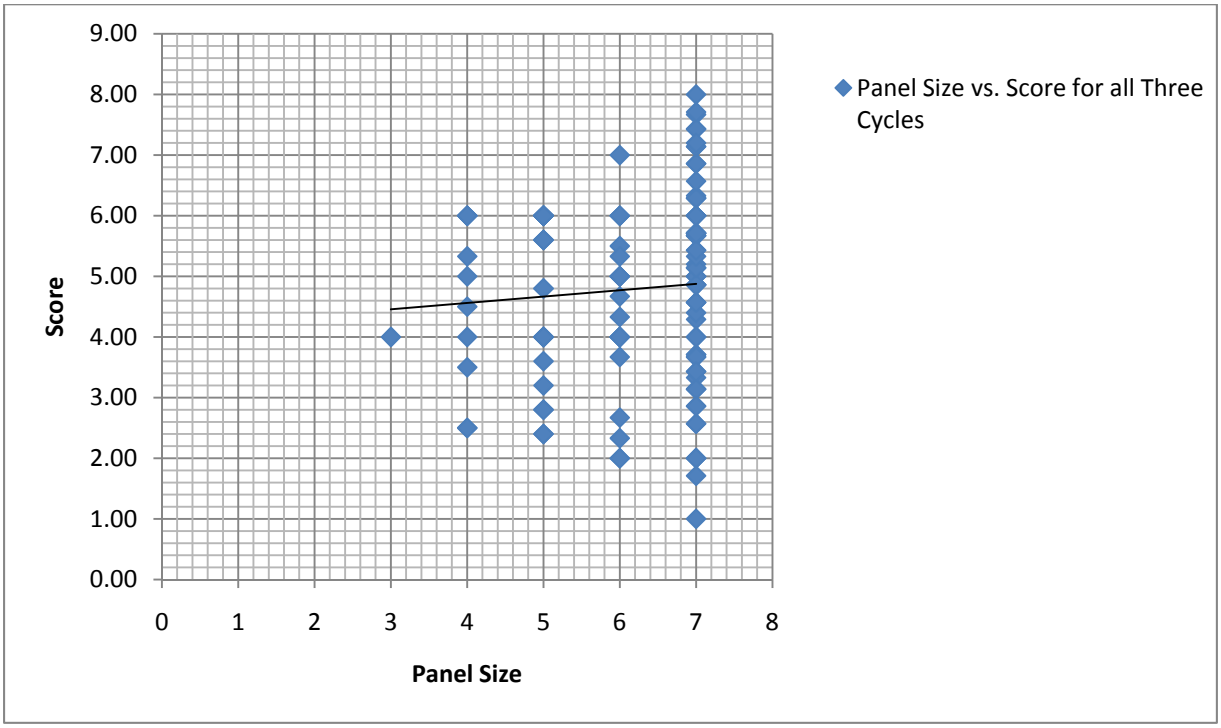


Figure 3. Panel Size vs. Score for All the Third Cycle Panels

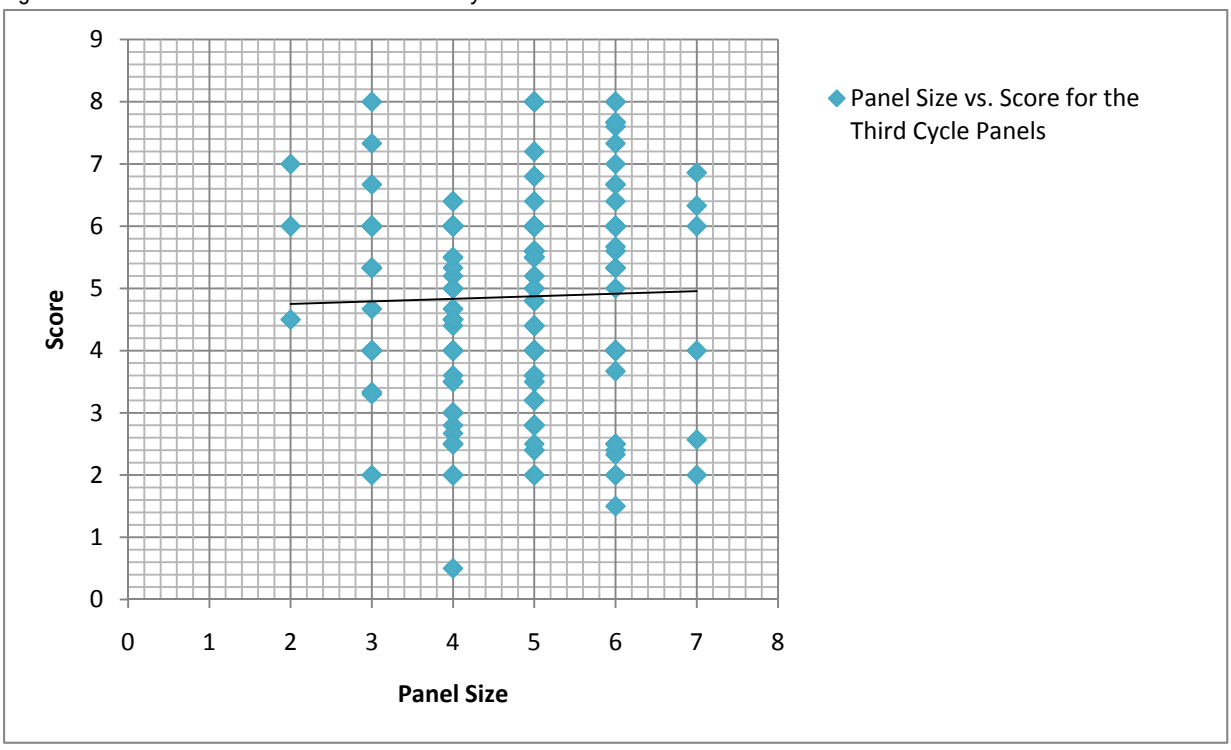


Figure 4. Number of Scientists vs. Score for the Third Cycle of the NP 211 Water Availability and Watershed Management Panels

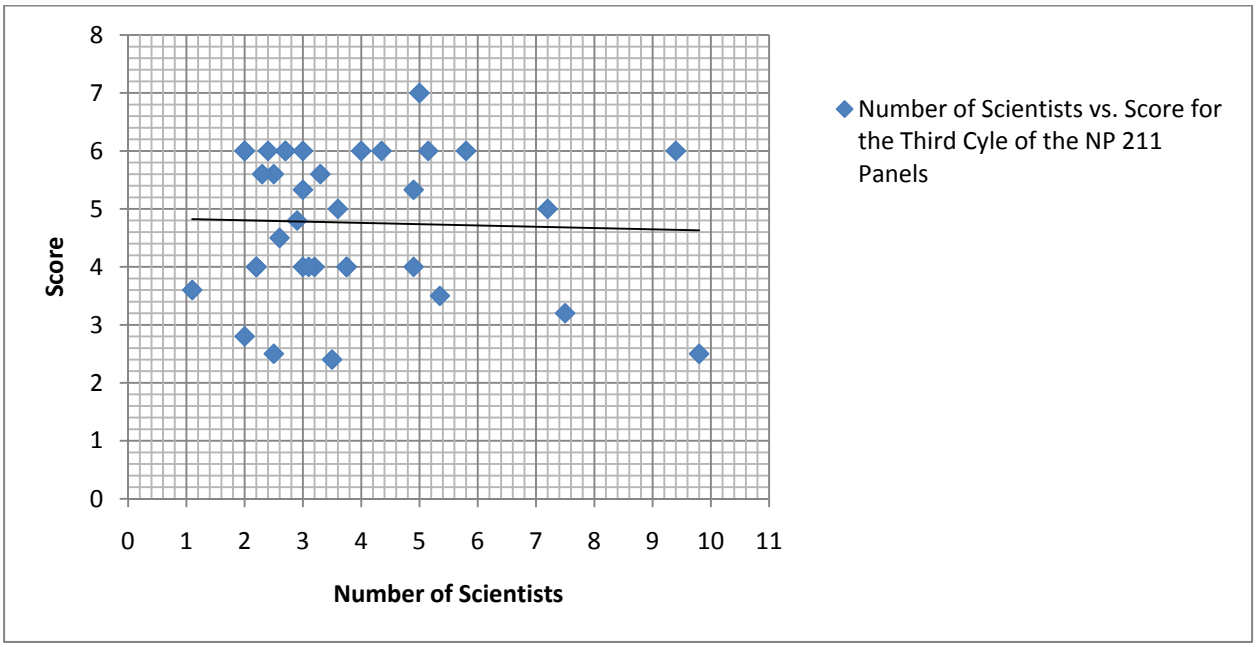


Figure 5. Initial Review Scores for the First (2001), Second (2007), and Third (2012) Cycle Distribution for the NP 211 Water Availability and Watershed Management Panels (average score 5.29; 4.31; 4.76, respectively). The number of plans reviewed by each cycle is in parentheses. Number over columns is the actual number of plans receiving that score.

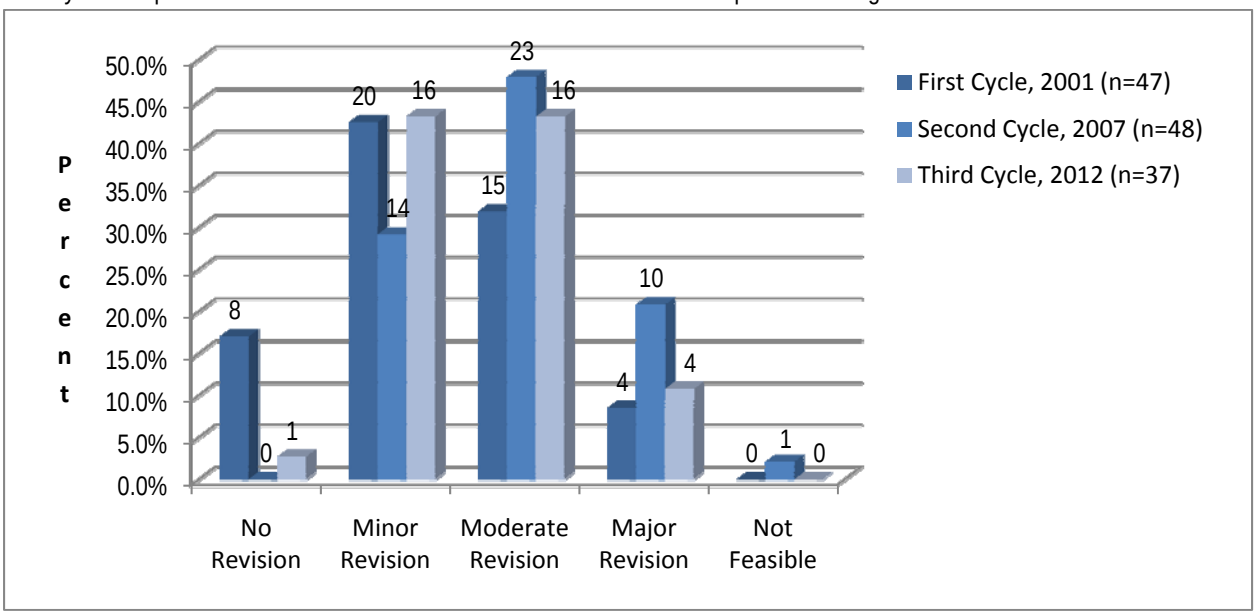
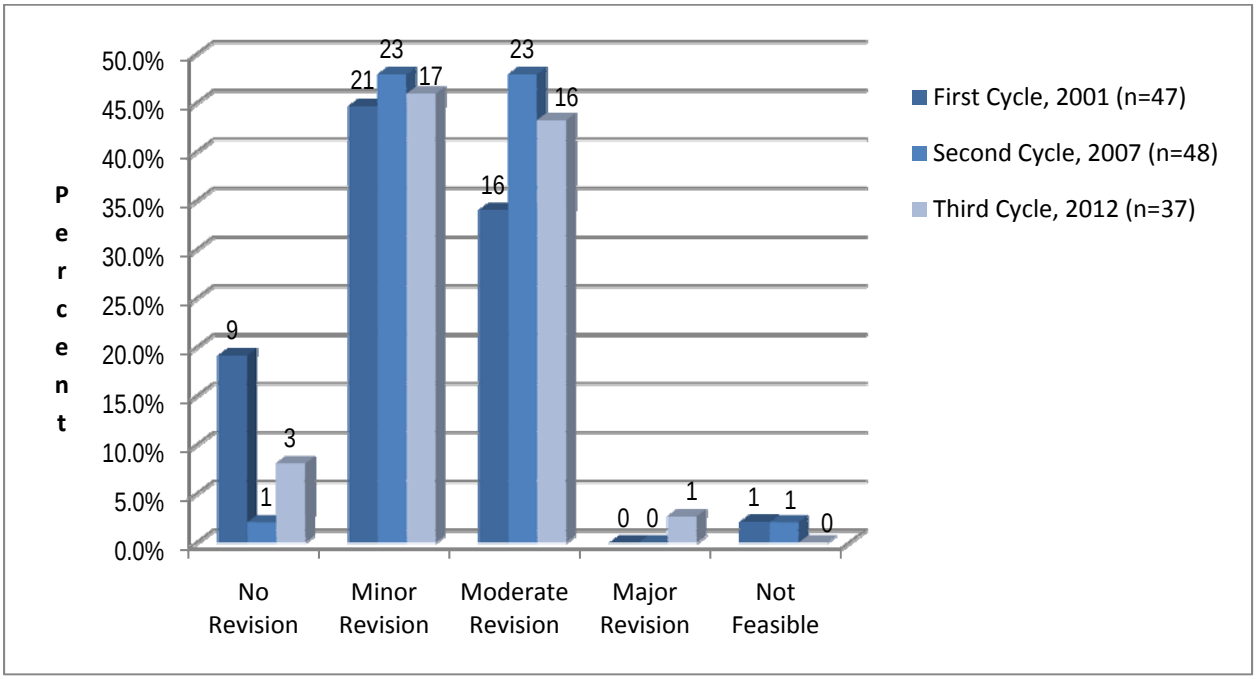


Figure 6. Final Review Scores for the First (2001), Second (2007), and Third (2012) Cycle Distribution for the NP 211 Water Availability and Watershed Management Panels (average score 5.49; 5.00; 5.15, respectively). The number of plans reviewed by each cycle is in parentheses. Number over columns is the actual number of plans receiving that score.



Panel Characteristics

ARS places responsibility for panel member selection primarily on external and independent Panel Chairs. ARS scientists, managers and the Office of National Programs may recommend panelists but the Panel Chair is under no obligation to use these recommendations. Several factors such as qualification, diversity, and availability play a role in who is selected for an ARS peer review panel. The 12 panels were composed of nationally and internationally recognized experts to review 37 projects primarily coded to the Water Availability and Watershed Management Program (See Table 1, page 2). The information and charts below provide key characteristics of the Water Availability and Watershed Management Panels. This information should be read in conjunction with the Panel Chair Statements.

Affiliations

Peer reviewers are affiliated with several types of institutions, especially universities, government, special interest groups, and industry. In some cases, peer reviewers have recently retired but are active as consultants, scientific editorial board members, and are members of professional societies. Also, several government-employed panelists are recognized for both their government affiliation and faculty ranking. Tables 2 and 3 show the type of institutions with which the Water Availability and Watershed Management Panel members were affiliated with at the time of the review.

Table 2. Faculty Rank of Panelists Affiliated with Universities

Panel	Professor	Associate Professor	Assistant Professor
Panel 1 – Irrigation	4	2	
Panel 2 – Water Productivity at Multiple Scales	3	1	
Panel 3 – Dryland/Rainfed and Drainage Water	5		
Panel 4 – Water Reuse	3		
Panel 5 – Water/Water Quality Processes, Management and Control	2	1	
Panel 6 – Sediment and Water Quality in Agricultural Watersheds	1	1	
Panel 7 – Water Treatment and Control Technologies	3	2	
Panel 8 – Managing Agricultural Water Quality	3		1
Panel 9 – Water Resource Management and Conservation	3		
Panel 10 – Managing Agricultural Watersheds and Landscapes	4	1	
Panel 11 – Water and Soil Conservation	3		
Panel 12 – Salt Tolerance	1	1	

Table 3. Other Affiliations Represented on the Panels

Panel	Government	Industry & Industry Organizations	Other
Panel 1 – Irrigation			
Panel 2 – Water Productivity at Multiple Scales			
Panel 3 – Dryland/Rainfed and Drainage Water			
Panel 4 – Water Reuse	1		
Panel 5 – Water/Water Quality Processes, Management and Control			1
Panel 6 – Sediment and Water Quality in Agricultural Watersheds	2		1
Panel 7 – Water Treatment and Control Technologies			
Panel 8 – Managing Agricultural Water Quality			
Panel 9 – Water Resource Management and Conservation	2		
Panel 10 – Managing Agricultural Watersheds and Landscapes	1		
Panel 11 – Water and Soil Conservation	1		
Panel 12 – Salt Tolerance	1		

Accomplishments

The peer review process is intended to be rigorous and objective, striving for the highest possible scientific credibility. In general, panelists are expected to hold a PhD unless the norm for their discipline tends to not require doctorate level education to achieve the highest recognition and qualification (e.g., engineers and modeling specialists). Panelists are also judged by their most recent professional accomplishments (e.g., awards and publications completed in the last five years). Finally, the panelists who are currently performing or leading research to address a problem similar to those

addressed in the National Program are preferred. Table 4 describes their characteristics in the Water Availability and Watershed Management Panels.

Table 4. The Panels' Recent Accomplishments

Panel	Published Articles Recently	Received Recent Professional Awards	Having Review Experience	Currently Performing Research
Panel 1 – Irrigation	6	3	6	5
Panel 2 – Water Productivity at Multiple Scales	4	4	4	4
Panel 3 – Dryland/Rainfed and Drainage Water	5	4	5	5
Panel 4 – Water Reuse	5	4	5	3
Panel 5 – Water/Water Quality Processes, Management and Control	4	2	4	4
Panel 6 – Sediment and Water Quality in Agricultural Watersheds	5	3	5	5
Panel 7 – Water Treatment and Control Technologies	5	5	5	5
Panel 8 – Managing Agricultural Water Quality	4	4	4	4
Panel 9 – Water Resource Management and Conservation	5	4	5	4
Panel 10 – Managing Agricultural Watersheds and Landscapes	6	4	6	6
Panel 11 – Water and Soil Conservation	4	4	4	3
Panel 12 – Salt Tolerance*			1	

*Data not available.

Current and Previous ARS Employment

The Research Title of the 1998 Farm Bill 105-185, mandated ARS's requirements for the peer review of ARS research projects: 1) panel peer reviews of each research project were mandated at least every five years and 2) the majority of peer reviewers must be external (non-ARS scientists).

Table 5. Affiliations with ARS

Panel	Currently Employed by ARS	Formerly Employed by ARS
Panel 1 – Irrigation		1
Panel 2 – Water Productivity at Multiple Scales		
Panel 3 – Dryland/Rainfed and Drainage Water		1
Panel 4 – Water Reuse		1
Panel 5 – Water/Water Quality Processes, Management and Control		1
Panel 6 – Sediment and Water Quality in Agricultural Watersheds		2
Panel 7 – Water Treatment and Control Technologies		2
Panel 8 – Managing Agricultural Water Quality		
Panel 9 – Water Resource Management and Conservation		1
Panel 10 – Managing Agricultural Watersheds and Landscapes		2
Panel 11 – Water and Soil Conservation		1
Panel 12 – Salt Tolerance		

Water Availability and Watershed Management Panel Chairs

Dr. Melba Crawford, PhD, ARS Panel Chair

Panel 10 – Managing Agricultural Watersheds and Landscapes

Professor and Associate Dean of Engineering Research, Purdue University, West Lafayette, IN

Education: B.S. & M.S. University of Illinois; PhD Ohio State University

Dr. Crawford is currently Professor and Associate Dean for Research at Purdue University. She is also the Director for the Laboratory for Applications of Remote Sensing. Her research interests are remote sensing and geospatial analysis.

Dr. Daniel Devlin, PhD, ARS Panel Chair

Panel 3 – Dryland/Rainfed and Drainage Water Management

Director, Kansas Center for Agricultural Resources and the Environment, Kansas State University, Manhattan, KS

Education: B.S. & M.S. Kansas State University; PhD Washington State University

Dr. Devlin is the Director for the Kansas Center for Agricultural Resources and the Environment, and Director of the Kansas Water Resources Institute, Kansas State University. His research interests include soil sustainability and water quality; and water quality at the watershed level.

Dr. James Dobrowolski, PhD, ARS Panel Chair

Panel 4 – Water Reuse; Panel 9 –Water Reuse Management and Conservation

National Program Leader, USDA, National Institute of Food and Agriculture, Division of Environmental Sciences, Washington, DC

Education: B.S. University of California; M.S. Washington State University; PhD Texas A&M University

Dr. Dobrowolski is a National Program Leader at the Institute of Bioenergy, Climate and Environment where he develops and manages national programs in Rangeland and Grassland Ecosystems and Agricultural Water Quality. His research interests include rangeland ecosystems, watershed management, multi-species, grazing, rangeland management and agricultural water security.

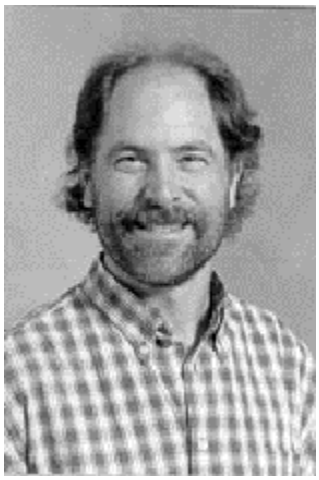
Dr. Thomas Franti, PhD, ARS Panel Chair

Panel 7 – Water Treatment and Control Technologies

Associate Professor, Department of Biological Systems Engineering, University of Nebraska, Lincoln, NE

Education: B.S. University of Wisconsin; M.S. Iowa State University; PhD Purdue University

Dr. Franti is currently an Associate Professor and Surface Water Management Engineer at the University of Nebraska. His research interests include water quality, hydrology and erosion, urban storm water BMPs and ecological engineering.



Dr. Mark Grismer, PhD, ARS Panel Chair

Panel 6 – Sediment and Water Quality in Agricultural Watersheds

Professor, Department of Land, Air and Water Resources, University of California, Sebastopol, CA

Education: B.S. & M.S. Oregon State University; PhD Colorado State University

Dr. Grismer is a Professor in the Department of Land, Air and Water Resources and Department of Biological and Agricultural Engineering. His research interests are soil-water engineering.

Dr. Stephen Hamilton, PhD, ARS Panel Chair

Panel 7 – Water Treatment and Control Technologies

Associate Director, W. K. Kellogg Biological Station, Michigan State University, Hickory Corners, MI

Education: B.S. Technological University, Houghton; M.A. University of Colorado; PhD University of California

Dr. Hamilton is a Professor in the Department of Zoology and Associate Director at the W.K. Kellogg Biological Station at Michigan State University. His research interests include Biogeochemistry and ecosystem ecology with particular attention to aquatic environments, hydrological controls of ecosystem structure and function, agricultural ecology; Global change, tropical rivers and floodplains; North-temperate wetlands, rivers and streams.

Dr. Rafael Munoz-Carpena, PhD, ARS Panel Chair

Panel 8 – Managing Agricultural Water Quality

Professor, University of Florida, Gainesville, FL

Education: B.S. & M.S. Universidad Politécnica de Madrid; PhD North Carolina State University

Dr. Munoz-Carpena is a Professor in the Department of Agricultural and Biological Engineering, University of Florida. His research interests include hydrology, water quality, computer modeling, and uncertainty analysis.

Dr. Michael O'Neill, PhD, ARS Panel Chair

Panel 11 – Water and Soil Conservation

National Program Leader, USDA, National Institute of Food and Agriculture, Institute of Bioenergy, Climate and Environment, Washington, DC

Education: AB University of Maryland; MA & PhD University of Buffalo

Dr. O'Neill is the National Program Leader at the Institute of Bioenergy, Climate and Environment where he administers the Water Resources Program.

Dr. Daniel Thomas, PhD, ARS Panel Chair

Panel 2 – Water Productivity at Multiple Scales

Department Head and Professor, Oklahoma State University, Stillwater, OK

Education: B.S. & M.E. Louisiana State University; PhD Purdue University

Dr. Thomas is Head and Professor of the Department of Biosystems and Agricultural Engineering at Oklahoma State University. His research interests include water resources engineering, irrigation, drainage, modeling, and precision agricultural systems.

Dr. George Vellidis, PhD, ARS Panel Chair

Panel 1 – Irrigation

Professor, University of Georgia, Tifton, GA

Education: B.S. & M.S. Virginia Tech; PhD University of Florida

Dr. Vellidis is a Professor of the Department of Biological and Agricultural Engineering at the University of Georgia. His research interests include water quality, irrigation, and precision agriculture.

Panel Chair Statements

All Panel Chairs are required to turn in a statement that describes how their panel was conducted and possibly provide comments on the review process that might not otherwise be found in the individual research project plan peer reviews. Panel Chairs are given some guidelines for writing their statements, but are nevertheless free to discuss what they believe is most important for broad audiences.

The University of Georgia

COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES
TIFTON CAMPUS

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Tifton, GA 31793, USA

30 November 2011

Dr. Donald P. Knowles, Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
5601 Sunnyside Avenue, MS 5142
Beltsville, MD 20705

Dear Dr. Knowles:

The NP 211 Panel 1 - Irrigation (2012) consisting of five reviewers and the panel chair (myself) met today to discuss the ARS project plans assigned to the panel. The meeting was conducted using the ATT Connect service and began promptly at 08:00 and concluded at 11:00 EST. Dr. Michael Strauss and Dr. Donald Knowles, both representing OSQR facilitated the panel's discussion. They both provided valuable insight about the ARS proposal writing and review process whenever the panel had questions.

The panel was very efficient throughout the review process. All the primary and secondary reviews were submitted on time with some panel members providing written reviews for all five proposals. Dr. Strauss integrated the individual review comments into a single document for each proposal and distributed the documents to the panel prior to the meeting. This was extremely helpful when preparing for the meeting.

At the beginning of the meeting, Dr. Strauss informed us that two of the five proposals assigned to the panel had been withdrawn so our discussion focused on the remaining three proposals. Using the ATT Connect service to simultaneously view and edit the compiled comments generally worked well although at least two of the panel members were disconnected during the meeting and had to reconnect. Audio quality was generally good although at times feedback or static noise was a problem.

The scientific background of the panel was well matched to the content of the proposals so the reviews were very thorough and evaluated the scientific merit, strengths, weakness, and potential for success of every objective in the proposals. When appropriate, the panel provided suggestions for improvement. During the meeting, the primary and secondary reviewers of each proposal provided the panel with a synopsis of the compiled comments following which we held an open discussion. Generally we discussed each objective and sub-objective sequentially and then discussed the overall proposal. Many additional comments were added to the compiled reviews during the discussion.

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USDA - Agricultural Research Service Cooperating
An Equal Opportunity/Affirmative Action Institution

We found that all three proposals we discussed were scientifically sound and proposed both timely and relevant work. The ARS scientists proposing the work were all well qualified and capable of conducting the projects. The panel, as a group, would like to voice its appreciation to ARS for allowing and encouraging its scientists to conduct research projects with long timeframes. These types of projects provide critical answers to many important agricultural problems which university researchers may not be able to adequately address within the two to four year timeframe now mandated by most extramural funding agencies.

Although all of the proposals were fundamentally sound, we did observe a wide range in the quality of the proposals. Some of the proposals were very well written while others were poorly written. The poorly written proposals were frustrating to review because they either did not provide enough information on certain aspects critical to evaluating their scientific merit or made it difficult to extract that information. We strongly suggest that ARS identify several well-written, high scoring proposals and provide those as examples to ARS scientists developing proposals in the future. Requiring future proposals to include a section on how project deliverables will be disseminated and used by stakeholders will greatly help future panels to evaluate the potential impact of the proposed work.

Thank you for the opportunity to participate in this important process. If you have any questions, please do not hesitate to contact me.

Sincerely,

George Vellidis, Professor
Coordinator of Research, Extension and Instruction - Tifton Campus

Division of Agricultural Sciences and Natural Resources

Department of Biosystems and Agricultural Engineering
Stillwater, Oklahoma 74078-6016

October 26, 2011

Dr. David Marshall, Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
5601 Sunnyside Avenue, MS 5142
Beltsville, MD 20705

1. Did the NP 211 Panel 2 (Water Productivity at Multiple Scales, 2012) have discussions that reflected:

Yes. This panel was very professional and complimented each other in the areas of expertise and areas of concern within project plans. Their past experience played a significant role in providing viable concerns and suggestions.

2. What were the most notable (positive or negative) characteristics of the discussion process and why:

Each of the panel members were prepared to talk about the projects they reviewed. The process provided a direct copy of the consolidated review comments, ordered by the objectives. In most cases the speaker may have had the original project plan open in another window on the computer, or available as a hard copy. Much more time was spent on projects and objectives where concerns existed. Less time was spent on areas with few concerns. We only had one peer reviewer with a conflict on a single project. He was excluded from all discussions, except when a general clarification of prevailing practices in the region was requested. His response was intended to help educate the other reviewers, not to provide comments on the particular project where a conflict existed.

All reviewers appeared to have a good grasp of the review expectations. Comments that may have been less appropriate for the particular project were removed in the consolidated documents. At times we wished to make suggestions that may not be part of this particular process (like modifying objectives).

The actual voting process was explained to our satisfaction. My prior misconceptions about "consensus ratings", i.e., coming to a similar voting category/conclusion across the entire panel, were satisfied during discussions prior to voting. The use of a majority opinion (not a consensus) was viable and useful.

3. What suggestions do you have to improve the peer review process?

We suggest using something like a Doodle poll to select the 1 hour pre-review

discussion, which could be instituted across multiple panels. The questions that arise about the process are not dissimilar between panels. The same process could be used to select the longer review session for a particular panel. The ARS review team seemed quite adept at overcoming technology obstacles for a system that was quite new to them and us. Not needing to travel for the review meeting was a strong asset. I also don't see a need to have "face to face" interactions (web cams) unless the panel is comprised of many individuals who have never interacted before.

4. Overall, was this an effective peer review panel?

Yes, it was an effective peer review panel in my estimation. The panel is to be commended for their sincere and effective efforts toward helping to improve the science tied to ARS programs.

Sincerely,

Daniel L. Thomas, PhD, PE
Professor and Head

Kansas State University

Kansas Center for Agricultural Resources and the Environment
44 Waters Hall
Manhattan, KS 66506-4002
785-532-0393
Fax: 785-532-6563

February 27, 2012

Dr. Donald Knowles, Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
5601 Sunnyside Avenue, MS 5142
Beltsville, MD 20705

Dear Dr. Knowles:

I recently served as the Chair for NP 211Panel 3 – Dryland/Rainfed and Drainage Water Management. I was very impressed with the quality of the research project plans, the input of my fellow panelists, and the professionalism of the staff at the ARS Office of Scientific Quality Review. My comments to questions below reflect my observations during the review process.

1. Did the panel have discussions that reflected:
   -sound and credible scientific peer review
   - ideas, creative thinking, and alternative approaches to improve the quality of research that may not have been considered by Agency scientists and staff.

I was extremely impressed with the discussions on individual plans and the amount of work and thinking that my follow panelists put into the process. The panel members were all senior scientists at land grant universities that had much experience in the project areas reviewed. There were many suggestions on project plans that were bought forward during the review process that can strengthen the projects.

2. What were the most notable (positive or negative) characteristics of the discussion process and why:

Most Positive: a) the ARS Office of Scientific Quality Review staff involved in the review were excellent, patiently explained the process, and really helped us through the entire review; (b) the amount of review time spent by the panelists and the depth of thought that went into the review process. I was frankly surprised by the commitment of the panel members; (c) we spent at least an hour discussing each project plan. That was just enough time for a thorough review of each project; 3) the new electronic technology worked perfectly for this type of teleconference review; and 4) our roles as peer reviewers were clearly explained throughout the process

Most Negative: I can't think of any real negative part of the discussion.

3. What suggestions do you have to improve the peer review process?

None

4. Overall, this was a highly effective peer review panel.

I appreciated the opportunity to chair the review panel and get a better understanding of the USDA-ARS planning process.

Sincerely,

Daniel L. Devlin, Ph.D.
Director, Kansas Center for Agricultural
Resources and the Environment and
Kansas Water Resources Institute
Professor of Agronomy

United States Department of Agriculture
National Institute of Food and Agriculture

Don Knowles, Ph.D
Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
5601 Sunnyside Avenue, MS 5142
Beltsville, MD 20705

January 3, 2012

Dear Dr. Knowles:

As panel manager, I am reporting on the recently completed Panel Meeting for NP 211-4, Water Reuse (2012). The panel met on December 12, 2011 and reviewed four projects. I am focusing these report comments on the ARS project plan peer review process. Let me know if you would like to discuss these comments further, if necessary.

First, the panelists chosen for this task were well-qualified and knowledgeable. Each panelist brought a unique perspective to the review and the four panelists had complementary expertise allowing us to cover the full spectrum of the reviews. The discussions of the two projects were detailed, exhaustive, and insightful. Panelists identified multiple strengths in the project descriptions and also shared opportunities for the project teams to improve the projects while remaining within the scope of proposed activities. The discussions of the projects were orderly – with all panelists participating in all aspects of the review with the exception of Conflicts of Interest (COIs). Panelists built upon comments and refrained from repeating review comments. After re-reading the projects, and in light of the reviewers' comments, I believe that the final evaluations of the four projects were fair, unbiased, and supportive of the work described in the projects.

Second, it was clear to me that the panelists were well prepared for the discussion. Their comments were thoughtful and succinct. We evaluated each detailed objective (some with sub-objectives) in an organized manner, using the first review to establish a *modus operandi* for evaluating the projects, and we continued to follow that procedure throughout the review process. Panelists shared positive and negative comments and they took time to explain comments where disagreement existed. We reviewed four projects; therefore, the online and teleconference logistics were appropriate and cost effective. I do not believe that the review rankings were at all impacted by using the online/teleconference system. I thought that Mike Strauss did an excellent job of clearly articulating the review process, the roles of reviewers, and the project scoring system. Chris Woods' organizational skills are commendable. All four panelists seemed very comfortable with the review process and the online system—and felt

that the process worked very well, and that the delivery of material and instructions was clear. Overall, the review took approximately three and one-half hours, which reflected the complexity of each objective in the four plans that we reviewed, and the total number of panelists that felt the need to participate.

In summary, I believe that the panel meeting for NP 211-4 – Water Reuse (2012) was very effective and well managed. I felt comfortable with the quality of the review comments and the high level of professionalism demonstrated in the lead up to the panel and during the panel review.

Thank you for the opportunity to serve as a panel manager.

Sincerely,

James P. Dobrowolski, Ph.D.
National Program Leader

MICHIGAN STATE
UNIVERSITY

1 March 2012

Dr. Donald Knowles, Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
5601 Sunnyside Avenue, MS 5142
Beltsville, MD 20705

Re.: NP 211 Panel 5 – Water/Water Quality Processes, Management and Control

My first experience in convening this panel was highly positive. I found the system to be well designed and the involvement of ARS staff to be very helpful. I am not accustomed to this kind of review; normally I am involved in fund/do not fund deliberations. However in retrospect I can see how this input would be invaluable to the research teams.

The hardest part was finding willing panel members with the right expertise and with good track records of publishing in the peer-reviewed literature. I found the list of suggested reviewers to be somewhat dated and had to look beyond that to find the right combination. Still, I could have used more of a modeling specialist, but we did the best we could.

My panelists were well prepared and the discussions were cordial and fruitful.

I especially appreciated the efficient use of my time, and particularly avoiding the need to travel for this panel.

Sincerely,

Stephen K Hamilton

Stephen K. Hamilton, PhD
Professor
hamilton@kbs.msu.edu

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Mark E. Grismer PhD PE
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13 December 2011

TO: Dr. Donald Knowles, Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
5601 Sunnyside Avenue, MS 5142
Beltsville, MD 20705

RE: NP 211 – Panel 6 Summary of Panel Meeting on 12/13/11

1. Did the NP 211 Sedimentation & WQ panel have discussions that reflected:
-sound and credible scientific peer review
- ideas, creative thinking, and alternative approaches to improve the quality of research that may not have been considered by Agency scientists and staff.

The panel reviewers did an excellent job reviewing and commenting on the proposals as well as providing valuable feedback during our discussions. They provided several suggestions for the USDA researchers that I think will greatly improve the planned research, or at least its conceptual under-pinnings.

2. What were the most notable (positive or negative) characteristics of the discussion process and why:
-level of preparation for the discussion
-time spent discussing each project
-logistical arrangements
-exclusion of peer reviewers who had a conflict with the project
-understanding of the review criteria and roles as peer reviewers
-scoring and critique writing procedures

The panel reviewers appeared to be well-prepared and were able to discuss each proposal at an appropriate level of detail. We spent approximately one hour on each proposal review, perhaps slightly more on the most problematic of the three. One reviewer was silent for the discussion of one proposal in which they may have been a possible conflict due to his familiarity with the researchers of that project. The reviewers appeared to understand their assignments and were readily able to develop an appropriate rating for each proposal.

3. What suggestions do you have to improve the peer review process?

Of course, teleconference calls are not the greatest, but seemed effective in this case.

4. Overall, was this an effective peer review panel?

Yes; this appears to have been a very functional panel that will develop excellent reviews and comments for the USDA researchers and administration such that the overall national research program in Sedimentation & Water quality should be improved.

Sincerely,

Mark E Grismer

Mark E. Grismer
Professor of Hydrologic Sciences and Biological & Agricultural Engineering
UC Davis

University of Nebraska Lincoln

DEPARTMENT OF BIOLOGICAL SYSTEMS ENGINEERING

February 28, 2012

Dr. Donald Knowles, Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
5601 Sunnyside Avenue, MS 5142
Beltsville, MD 20705

Dr. Knowles:

I am writing to report the efforts of review panel NP 211 Panel 7 – Water Treatment and Control Technologies (2012). This panel consisted of five faculty researchers, including myself, with academic and research backgrounds related to the proposals under review.

Our deliberations on the assigned proposals provided a sound and credible scientific peer review of each, including numerous suggestions for improving the researcher's approach, clarifying their objectives, and, in one case, directing the objectives to alternative objectives perceived equally or more relevant.

In general, our panel was well prepared for discussions, and the logistical arrangements were convenient. During our review meeting a sufficient amount of time was provided for review of all proposals; however, more time may have been needed if major concerns were encountered for all proposals reviewed and a greater amount of discussion needed.

Logistical arrangement for our teleconferences was well organized, and the methods used to gather and summarize comments allowed the panel to focus on scientific review, not paperwork.

I suggest that the review process could be marginally improved by ensuring adequate time for review of especially long, multi-objective proposals.

I believe our review panel was highly effective in improving the scientific approach described in one proposal, and provided all the proposals with a sound review.

Sincerely,

Thomas G. Franti, Ph.D., P.E.
Associate Professor
242 L.W. Chase Hall
Lincoln, NE 68583-0726

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Dr. David Marshall, Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
5601 Sunnyside Avenue, MS 5142
Beltsville, MD 20705

March 15, 2012

Dear Dr. Marshall,

I am writing this Chair Statement Letter in fulfillment of the requirements as Chair of the NP 211 Panel 8 - Managing Agricultural Water Quality (2012). The peer-review process started in August 2011 when I was first contacted to Chair the Panel and proposed the rest of the Panel members. After the invitations I received an initial web-based Chair's orientation on August 30 when the ARS peer-review process was explained. Following this the rest of the Panel was appointed and the final Plans for review were sent to the Panel on October 5. One of the initial Plans was removed from consideration due to the closing of the ARS research station responsible for the Plan. On October 6 the rest of the Panel members convened on-line for the orientation, and members were assigned as Primary and Secondary reviewers for the different Plans, and written reports sent to the ARS office in preparation for the Panel meeting.

On December 9 the Panel convened for the detailed discussion of the Plans following the presentation of the Primary and Secondary reviewers with comments from all Panel members. This meeting took around 4-5 hours, and initial reports were compiled for each Plan based on the written review comments and notes during the meeting. The reports were circulated among the Panel members for revisions and final copies sent to ARS on December 20, 2011. The Panel received a reply from the Plans' PIs on March 1, 2011 with detailed responses to the recommendations and improvements made to the Plans. Based on the Panel's initial recommendations no further action was needed.

The Panel members were excellent as reflected in the written reports and recommendations. All were very knowledgeable and very active in the topical areas, engaging and eager to improve the Plans with their recommendations. The Panel recognized the value of ARS review process and the efforts to approximate this to that of open federal competitions in other Agencies, including USDA and others. The Panel work deliberations were assisted at all times by excellent ARS personnel, while always maintaining the scientific independence of the Panel to reach its unbiased conclusions.

Overall the peer review process worked very well, but we would like to present specific recommendations in 3 areas: scoring of the Plans, structure of the written Plans, and formulation of hypothesis-driven research.

First, when presenting the scoring procedure of the projects during the Orientations, it was conveyed that few Plans receive a below-passing grade since Plans are the main source of funding and work organization for ARS teams. It was also conveyed that below passing scores may have negative consequences for the scientists involved. While this represents the current

nature of ARS, it possibly biases the peer-review of the Plans toward "acceptance" compared to open competitions in other Agencies.

Second, the structure of the Plans should be revised to allow for a better integration of their components. We realize that the Plans at times include components/activities belonging to seemingly disparate ARS programmatic needs due to the structure of the ARS research stations. However, in most cases it could be possible to integrate most of these into a research framework if additional guidelines are provided to the research team. This would result in cohesive Plans where the more basic research components support each other across spatial and temporal scales and inform the more applied activities of the Plans. An introductory section (similar to the Project Overview in NSF) would serve this integration purpose and clarify the overarching goal of each plan, as well as introduce the project components supporting this.

Finally, additional guidance/training could be provided to research teams to prepare the Plans (at least on their basic research components), particularly on the development of the more hypothesis-driven components of the research Plans. We recognize that not all objectives must be hypothesis driven, but many components of the Plans would have benefited from rigorous hypotheses and research designs. While some hypotheses in the Plans were well prepared, many needed to be re-written such that they pointed to a science question that was novel, nonobvious, clear, and could be tested with the proposed experimental designs. In fact, the Plans generally suffered from the weakness of the hypotheses (or lack thereof). Compelling hypothesis must be novel, based on a clear understanding of gaps in our current knowledge on the topic, should address these gaps, and be testable.

The Panel agreed that consideration of these changes within the ARS review process would yield Plans more aligned with proposals in open competitions and increase the quality of the resulting research. We realize the particular nature of ARS and Plans within the organization. We offer these candid comments in the spirit of continuous improvement of the ARS peer-review process that might advance the goals of this great agency.

In summary, this was an effective peer-review panel that produced excellent reviews that the PIs used to improve their original proposals. All the Panel members expressed that this had been an excellent opportunity for professional growth and to contribute to the shared goals of ARS.

Sincerely,

Professor &
UF Research Foundation Professor

United States Department of Agriculture

National Institute of Food and Agriculture

Don Knowles, Ph.D
Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
5601 Sunnyside Avenue, MS 5142
Beltsville, MD 20705

February 27, 2012

Dear Dr. Knowles:

As panel manager, I am reporting on the recently completed Panel Meeting for NP 211-9, Water Reuse Management and Conservation (2012). T he panel met on December 8, 2011 and reviewed two projects. I am focusing these report comments on the ARS project plan peer review process. Let me know if you would like to discuss these comments further, if necessary.

First, the panelists chosen for this task were well-qualified and knowledgeable. Each panelist brought a unique perspective to the review and the four panelists had complementary expertise allowing us to cover the full spectrum of the reviews. The discussions of the two projects were detailed, exhaustive, and insightful. Panelists identified multiple strengths in the project descriptions and also shared opportunities for the project teams to improve the projects while remaining within the scope of proposed activities. The discussions of the projects were orderly – with all panelists participating in all aspects of the review. Panelists were good about building upon comments rather than repeating information. After re-reading the projects in light of the reviewers' comments, I believe that the final evaluations of the two projects were fair, unbiased, and supportive of the work described in the projects.

Second, it was clear to me that the panelists were well prepared for the discussion. Their comments were thoughtful and succinct. We evaluated each detailed objective (with several subobjectives) in an organized manner, using the first review to establish a *modus operandi* for evaluating the projects and we continued to follow that procedure throughout the review process. Panelists shared positive and negative comments and they took time to explain comments where disagreement existed. We reviewed only two projects; therefore, the online and teleconference logistics were appropriate and cost effective. The only glitch was the problem with AT&T restricting one panelist from easily participating by phone—but thanks to Mike Strauss, we were able to complete the review. I do not believe that the review rankings were at all impacted by using the online/teleconference system. I thought that Mike Strauss did an excellent job of clearly articulating the review process, the roles of reviewers, and the project scoring system. All three panelists seemed very comfortable with the review process

and the online system—and felt "the process worked very well, the delivery of material and instructions were clear." Overall, the review took approximately two hours, which reflected the complexity of each objective in the two plans that we reviewed, and the total number of panelists that felt the need to participate.

In summary, I believe that the panel meeting for NP 211-9 – Water Reuse Management and Conservation (2012) was very effective and well managed. I felt very comfortable with the quality of the review comments and the high level of professionalism demonstrated in the lead up to the panel and during the panel review.

Thank you for the opportunity to serve as a panel manager.

Sincerely,

James P. Dobrowolski, Ph.D.
National Program Leader

PURDUE
UNIVERSITY

COLLEGE OF ENGINEERING

April 19, 2012

Dr. Joyce Loper, Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
5601 Sunnyside Avenue, MS 5142
Beltsville, MD 20705

Dear Dr. Loper,

I am writing as the chair of Panel 10 – Managing Agricultural Watersheds and Landscapes, that was convened on December 21, 2011 to review the proposed work plans for 5 ARS projects.

The review panel was initially vetted for conflicts of interest by ARS. Reviewers who accepted the invitation are experts in the science of the project work plans to which they were assigned. I believe that all members except me had previous experience with the ARS panel review process, and some served on other panels in 2011. They took the responsibility seriously and were well prepared for the panel review. The full panel engaged in the discussion of the work plans and reviews, scoring, and development of the summary statements.

The panel conducted a telecon that lasted approximately 3.5 hours, during which time the reviews were presented and discussed by the entire panel. Discussions ranged from a minimum of 30 minutes per proposal to nearly an hour. The summaries were approved by the panel. Feedback on the work plans included both critical review and suggestions for change that could improve the proposed plans.

The entire process was quite professional, and the support of the ARS staff greatly facilitated the process. This is a very effective review process, especially for a small number of work plans. The time allocated for the panel was fully used, but is probably the maximum that could be committed for a virtual panel.

Thank you for the opportunity to participate and serve as chair of this ARS work plan review cycle. Please do not hesitate to contact me if I can provide further information.

Sincerely,

Melba M. Crawford, PhD
Associate Dean of Engineering for Research
Interim Head of Civil Engineering

United States Department of Agriculture | National Institute of Food and Agriculture

Dr. David Marshall, Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
5601 Sunnyside Avenue, MS 5142
Beltsville, MD 20705

December 5, 2011

Dear Dr. Marshall:
I am reporting on the recently completed Panel Meeting for NP 211-11 – Water and Soil Conservation (2012). The panel met on December 2, 2011 and reviewed three projects. My comments here focus on the peer review process; I would be happy to discuss these comments with you if necessary.

First, I would point out that the panelists were extremely qualified and knowledgeable. Each panelist brought a unique perspective to the review and the three panelists had complementary expertise allowing us to cover the full spectrum of the reviews. The discussions of the three projects were extremely insightful. Panelists identified multiple strengths in the project descriptions and also shared opportunities for the project teams to improve the projects while remaining within the scope of proposed activities. The discussions of the projects were very orderly – the panelists often building upon comments rather than repeating information. After re-reading the projects in light of the reviewers' comments, I believe that the final evaluations of the three projects were extremely fair, unbiased, and supportive of the work described in the projects.

Second, it was clear to me that the panelists were very well prepared for the discussion. Their comments were thoughtful and succinct. In my estimation, we used the first review to establish a protocol for evaluating the projects and we continued to follow that protocol throughout the review process. Panelists shared positive and negative comments and they took time to explain comments where disagreement existed. We were reviewing only three projects; therefore, the online and teleconference logistics were appropriate and cost effective. I do not believe that the review rankings were at all impacted by using the online/teleconference system. I thought that Mike Strauss did an excellent job of clearly articulating the review process, the roles of reviewers, and the project scoring system. All three panelists seemed very comfortable with the review process and the online system. Overall, the review took approximately 90 minutes. I'm not certain about other panels, however, one suggestion would be to keep the number of projects reviewed between three and five.

In summary, I believe that the panel meeting for NP 211-11 – Water and Soil Conservation (2012) was extremely effective and very well managed. I felt very comfortable with the quality of the review comments and the high level of professionalism demonstrated in the lead up to the panel and during the panel review.

Thank you for the opportunity to serve as a panel manager.

Best Regards,

Michael P. O'Neill, Ph.D.
National Program Leader

Projected Reviewed by the Water Availability and Watershed Management

Beltsville Area

Wade Crow

Leveraging Remote Sensing, Land Surface Modeling and Ground-Based Observations for the Integrative Assessment of Water Quantity and Quality Variables within Heterogeneous Agricultural Landscapes

Mid South Area

Roger Kuhnle

Technologies for Managing Water and Sediment Movement in Agricultural Watersheds

Martin Locke

Integrated Strategies for Improved Water Quality and Ecosystem Integrity within Agricultural Watersheds

Michele Reba

Preserving Water Quality and Availability for Agriculture in the Lower Mississippi River Basin

Mathias Romkens and Craig Hickey (NCPA)

Acoustic and Geophysical Technology Development for Improving Assessment and Monitoring of Erosion and Sediment Transport in Watersheds, and the Integrity of Earthen Dams

Mathias Romkens and Sam Wang (NCCHE)

Improving Computational Modeling in Support of Better Erosion and Sediment Movement Control in Agricultural Watersheds

Rui Xiu Sui

Development of Water Management Technologies for the Mid-South

Paul White

Integrated Crop, Soil, and Water Management Systems for Sustainable Production of Sugarcane for Bioenergy Feedstock

Midwest Area

Barry Allred

Integrated Drainage Water and Agronomic Management Strategies for Environmental Protection and Sustainable Agricultural Production in the Midwest U.S.

Dennis Flanagan

Assessing Conservation Effects on Water Quantity and Quality at Field and Watershed Scales

Kevin King

Environmental Effects and Services Resulting from Prevailing and Innovative Land Use and Management Practices within Poorly Drained Midwest Landscapes

William Koskinen

Practices to Protect Water Quality and Conserve Soil and Water Resources in Agronomic and Horticultural Systems in the North Central United States

Robert Lerch

Improving Water Quality in Agricultural Watersheds Underlain by Claypan and Restrictive Layer Soils

Mark Tomer

Managing Agricultural Water Quality in Fields and Watersheds: New Practices and Technologies

Earl Vories

Improving Irrigation Management for Humid and Sub-Humid Climates

North Atlantic Area

Peter Kleinman

Management and Conservation Practices to Improve Water Quality in Agroecosystems of the Northeastern U.S.

Northern Plains Area

Timothy Green, James Ascough, II and Gregory McMaster

Spatial Modeling of Agricultural Watersheds: Water and Nutrient Management and Targeted Conservation Effects at Field to Watershed Scales

Dale Shaner

Management Strategies to Sustain Irrigated Agriculture with Limited Water Supplies

Pacific West Area

James Ayars

Developing Sustainable Cropping Systems to Improve Water Productivity and Protect Water and Soil Quality in Irrigated Agriculture

David Bjorneberg

Soil and Water Conservation for Northwestern Irrigated Agriculture

David Goodrich

Ecohydrological Processes, Scale, Climate Variability, and Watershed Management

Catherine Grieve

Crop Genetic Improvement and Crop Management in Irrigated Areas Affected by Salinity and Toxic Ions

Douglas Hunsaker

Enhancing Water Conservation and Crop Productivity in Irrigated Agriculture

Mark Seyfried

Understanding Snow and Hydrologic Processes in Mountainous Terrain with a Changing Climate

Todd Skaggs

Effects of Agricultural Water Management and Land Use Practices on Regional Water Quality

Jeffry Stone

Soil Erosion, Sediment Yield, and Decision Support Systems for Improved Land Management on Semiarid Rangeland Watersheds

Donald Suarez

Integrated Field Scale Management Systems for Use of Degraded Waters

Clinton Williams

Reuse of Treated Municipal Waste Water for Irrigation as a Means to Increase Alternative Water Supplies

South Atlantic Area

Joseph Albano

Algal-Based Water Treatment Technologies for Sustainable Horticultural Crop Production

Robert Lowrance

Enhancing Environmental Quality and Ecosystem Services in Southeastern U.S. Coastal Plain Agricultural Watersheds

Kenneth Stone

Managing Water Availability and Quality to Maintain or Increase Agricultural Production, Conserve Nature Resources, and Enhance Environmental Quality in Humid Regions

Southern Plains Area

Jeffrey Baker

Managing and Modeling Deficit Irrigation and Limited Rainfall for Crop Production in Semi-Arid Regions

David Brauer and Steven Evett

Improving Water Productivity and New Water Management Technologies to Sustain Rural Economies

Jurgen Garbrecht

Adapting Soil and Water Conservation to Meet the Challenges of a Changing Climate

Gregory Hanson

Development of Safe, Efficient Engineering Measures for Design, Analysis, and Rehabilitation of Hydraulic Structures and Channels

James Kiniry

Enhanced Models and Conservation Practices for Water Resource Management and Assessment

Patrick Starks

Agricultural Land Management to Optimize Productivity and Natural Resource Conservation at Farm and Watershed Scales

Office of Scientific Quality Review

The Office of Scientific Quality Review (OSQR) manages and implements the ARS peer review system for research projects, including peer review policies, processes and procedures. OSQR centrally coordinates and conducts panel peer reviews for project plans within ARS' National Program every five years.

OSQR sets the schedule of National Program Review sessions. The OSQR Team is responsible for:

- Panel organization and composition (number of panels and the scientific disciplines needed)
- Distribution of project plans
- Reviewer instruction and panel orientation
- The distribution of review results in ARS
- Notification to panelists of the Agency response to review recommendations
- *Ad hoc* or re-review of project plans

Contact

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