

EXHIBIT A-21

EPA-625

William
Perkins/DC/USEPA/US
09/10/2009 03:09 PM

To perkins.william
cc
bcc

Subject National security RTC backup

(b)(5) Deliberative

9.7.15.1 National Security.doc

Bill Perkins
Climate Change Adaptation Analyst
Climate Science and Impacts Branch
Climate Change Division
U.S. Environmental Protection Agency
perkins.william@epa.gov
(O) 202.343.9460
(F) 202.343.2202
(C) (b)(6)

EPA-EF-000845

EPA-626

Marcus
Sarofim/DC/USEPA/US
09/10/2009 03:45 PM

To Suzanne Kocchi
cc Ben DeAngelo, Jason Samenow, Rona Birnbaum
bcc
Subject Re: black carbon, tropospheric Ozone, water vapor

Hi Suzanne,

Here is the document [REDACTED] (b)(5) Deliberative

[REDACTED]

[REDACTED] (b)(5) Deliberative

Let me know if you need anything else,

-Marcus

[REDACTED] (b)(5) Deliberative

MRRcommentresponseBCH2003-mcs.doc

From Ben:

[REDACTED] (b)(5) Deliberative

[REDACTED]

Marcus C. Sarofim, PhD
phone: 202-343-9993
fax: 202-343-2202
1310 L Street 256C
AAAS Science & Technology Policy Fellow
with the EPA Climate Division

Suzanne Kocchi he didn't send me any and I do need t... 09/10/2009 11:26:15 AM

From: Suzanne Kocchi/DC/USEPA/US
To: Marcus Sarofim/DC/USEPA/US@EPA
Date: 09/10/2009 11:26 AM
Subject: Re: black carbon, tropospheric Ozone, water vapor

he didn't send me any and I do need them so if you have them would be great if I could get something today. thanks.

EPA-EF-000846

Marcus Sarofim Suzanne, did Jason get back to you on... 09/10/2009 11:18:34 AM

From: Marcus Sarofim/DC/USEPA/US
To: Suzanne Kocchi/DC/USEPA/US@EPA
Date: 09/10/2009 11:18 AM
Subject: black carbon, tropospheric Ozone, water vapor

Suzanne, did Jason get back to you on this? He's out on jury duty today, so if you need the edits and you don't have them yet, let me know [REDACTED] (b)(5) Deliberative

-Marcus

Marcus C. Sarofim, PhD
phone: 202-343-9993
fax: 202-343-2202
1310 L Street 256C
AAAS Science & Technology Policy Fellow
with the EPA Climate Division

EPA-627

Lesley Jantarasami
04/01/2010 03:49 PM

To
cc
bcc

Subject UPGOAD C:\Documents and Settings\ljantara\My Documents\Endangerment\02_Comments and Responses\05_For OGC Review\Comments that need OGC input-DBC v2.doc

(b)(5) Deliberative

- Comments that need OGC input-DBC v2.doc

EPA-628

David
Chalmers/DC/USEPA/US
09/10/2009 04:33 PM

To Lesley Jantarasami
cc
bcc

Subject updated doc with comments for OGC review

(b)(5) Deliberative

Please find the revised doc attached. Thanks.

(b)(5) Deliberative

Comments that need UGCL input-DBC v2.doc

David Chalmers
ORISE Fellow
U.S. EPA, Climate Change Division
202.343.9814

EPA-EF-000849

EPA-629

William
Perkins/DC/USEPA/US
09/10/2009 04:51 PM

To perkins.william
cc
bcc

Subject RTC: national security draft backup

(b)(5) Deliberative

9.7.15.1 National Security.doc

Bill Perkins
Climate Change Adaptation Analyst
Climate Science and Impacts Branch
Climate Change Division
U.S. Environmental Protection Agency
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(F) 202.343.2202
(C) (b)(6)

EPA-EF-000850

EPA-630

Marcus Sarofim/DC/USEPA/US
09/10/2009 05:06 PM

To Suzanne Kocchi
cc Ben DeAngelo, Jason Samenow, Rona Birnbaum
bcc
Subject Re: black carbon, tropospheric Ozone, water vapor

You should have the response to the last comment (b)(5) Deliberative

-Marcus

Marcus C. Sarofim, PhD
phone: 202-343-9993
fax: 202-343-2202
1310 L Street 256C
AAAS Science & Technology Policy Fellow
with the EPA Climate Division

Suzanne Kocchi Marcus - There are no edits on the last... 09/10/2009 05:00:42 PM

From: Suzanne Kocchi/DC/USEPA/US
To: Marcus Sarofim/DC/USEPA/US@EPA
Cc: Ben DeAngelo/DC/USEPA/US@EPA, Jason Samenow/DC/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA
Date: 09/10/2009 05:00 PM
Subject: Re: black carbon, tropospheric Ozone, water vapor

Marcus - There are no edits on the last comment/response. Are you guys ok with the response as is?
Thanks- Suzie

Marcus Sarofim Hi Suzanne, Here is the document with... 09/10/2009 03:45:35 PM

From: Marcus Sarofim/DC/USEPA/US
To: Suzanne Kocchi/DC/USEPA/US@EPA
Cc: Ben DeAngelo/DC/USEPA/US@EPA, Jason Samenow/DC/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA
Date: 09/10/2009 03:45 PM
Subject: Re: black carbon, tropospheric Ozone, water vapor

Hi Suzanne,

Here is the document (b)(5) Deliberative

(b)(5) Deliberative

Let me know if you need anything else,

-Marcus

[attachment "MRRcommentresponseBCH2OO3-mcs.doc" deleted by Marcus Sarofim/DC/USEPA/US]

From Ben:

[REDACTED] (b)(5) Deliberative

[REDACTED]

Marcus C. Sarofim, PhD
phone: 202-343-9993
fax: 202-343-2202
1310 L Street 256C
AAAS Science & Technology Policy Fellow
with the EPA Climate Division

Suzanne Kocchi [he didn't send me any and I do need t...](#) 09/10/2009 11:26:15 AM

From: Suzanne Kocchi/DC/USEPA/US
To: Marcus Sarofim/DC/USEPA/US@EPA
Date: 09/10/2009 11:26 AM
Subject: Re: black carbon, tropospheric Ozone, water vapor

he didn't send me any and I do need them so if you have them would be great if I could get something today. thanks.

Marcus Sarofim [Suzanne, did Jason get back to you on...](#) 09/10/2009 11:18:34 AM

From: Marcus Sarofim/DC/USEPA/US
To: Suzanne Kocchi/DC/USEPA/US@EPA
Date: 09/10/2009 11:18 AM
Subject: black carbon, tropospheric Ozone, water vapor

Suzanne, did Jason get back to you on this? He's out on jury duty today, so if you need the edits and you don't have them yet, let me know [REDACTED] (b)(5) Deliberative

-Marcus

Marcus C. Sarofim, PhD
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fax: 202-343-2202
1310 L Street 256C
AAAS Science & Technology Policy Fellow
with the EPA Climate Division

EPA-631

David
Chalmers/DC/USEPA/US
09/10/2009 05:09 PM

To Akram Assem
cc Margaret Reidy
bcc William Perkins
Subject Re: OAR-2009-0171: Books and other copyrighted files

Hi Assem and Margaret:

We need to review these books for our response to comment document. Can I come by to 'borrow' them from the docket office tomorrow? I'll be transporting them to 1310 L St. for review and could return them within a month or so. How's 12?

Many thanks,

David Chalmers
ORISE Fellow
U.S. EPA, Climate Change Division
202.343.9814

Akram Assem David, 1) These are files numbers for b... 09/01/2009 01:35:28 PM

From: Akram Assem/DC/USEPA/US
To: David Chalmers/DC/USEPA/US@EPA
Cc: Margaret Reidy/DC/USEPA/US@EPA
Date: 09/01/2009 01:35 PM
Subject: OAR-2009-0171: Books and other copyrighted files

David,
1) These are files numbers for books received from comments:

[EPA-HQ-OAR-2009-0171-3722.8](#) Comment attachment submitted by Paul D. Phillips, Robert T. Connery and James A. Holtkamp of Holland and Hart LLP on behalf of Energy Companies Coalition

[EPA-HQ-OAR-2009-0171-3722.11](#) Comment attachment submitted by Paul D. Phillips, Robert T. Connery and James A. Holtkamp of Holland and Hart LLP on behalf of Energy Companies Coalition

[EPA-HQ-OAR-2009-0171-3722.6](#) Comment attachment submitted by Paul D. Phillips, Robert T. Connery and James A. Holtkamp of Holland and Hart LLP on behalf of Energy Companies Coalition

[EPA-HQ-OAR-2009-0171-3722.7](#) Comment attachment submitted by Paul D. Phillips, Robert T. Connery and James A. Holtkamp of Holland and Hart LLP on behalf of Energy Companies Coalition

[EPA-HQ-OAR-2009-0171-3722.9](#) Comment attachment submitted by Paul D. Phillips, Robert T. Connery and James A. Holtkamp of Holland and Hart LLP on behalf of Energy Companies Coalition

[EPA-HQ-OAR-2009-0171-3722.11](#) Comment attachment submitted by Paul D. Phillips, Robert T. Connery and James A. Holtkamp of Holland and Hart LLP on behalf of Energy Companies Coalition

EPA-EF-000853

Coalition

[EPA-HQ-OAR-2009-0171-3722.12](#) Comment attachment submitted by Paul D. Phillips, Robert T. Connery and James A. Holtkamp of Holland and Hart LLP on behalf of Energy Companies Coalition

[EPA-HQ-OAR-2009-0171-3722.3](#) Comment attachment submitted by Paul D. Phillips, Robert T. Connery and James A. Holtkamp of Holland and Hart LLP on behalf of Energy Companies Coalition

[EPA-HQ-OAR-2009-0171-3722.4](#) Comment attachment submitted by Paul D. Phillips, Robert T. Connery and James A. Holtkamp of Holland and Hart LLP on behalf of Energy Companies Coalition

[EPA-HQ-OAR-2009-0171-3722.5](#) Comment attachment submitted by Paul D. Phillips, Robert T. Connery and James A. Holtkamp of Holland and Hart LLP on behalf of Energy Companies Coalition

[EPA-HQ-OAR-2009-0171-6709.1](#) Comment attachment submitted by J. Ambrose

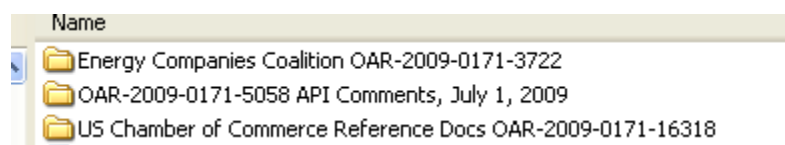
[EPA-HQ-OAR-2009-0171-5158.1](#) Comment attachment submitted by Paul D. Phillips, et al., Holland & Hart

[EPA-HQ-OAR-2009-0171-5158.2](#) Comment attachment submitted by Paul D. Phillips, et al., Holland & Hart

[EPA-HQ-OAR-2009-0171-5158.3](#) Comment attachment submitted by Paul D. Phillips, et al., Holland & Hart

[EPA-HQ-OAR-2009-0171-3627](#) Comment submitted by Maureen Martin, Senior Fellow, Legal Affairs, The Heartland Institute

2) Also, I wanted to ask whether you have all the files - many of them copyrighted reference files - from three big comments on the screen-shot below? If you have not, we can put them on a CD and make them available to you. Let me know.



The responsive records include several copyrighted works. These are available for inspection at the EPA Docket Office under Docket ID# EPA-HQ-OAR-2009-0171.

Thanks.

Assem

Assem Akram
USEPA Docket Center
Records Information Manager IV
ASRC Management Services-Contractor
Phone: (202) 566-9555
Email: assem.akram@epa.gov



EPA-632

Lesley
Jantarasami/DC/USEPA/US
09/10/2009 05:49 PM

To **Marcus Sarofim**
cc
bcc
Subject

Hey Marcus,

Here are some notes I took during the webinar this afternoon. Most, if not all, of it was information we already knew, so I'm not sure how helpful it was. But we do have contacts if we want to ask follow-up questions.

(b)(5) Deliberative

Notes RTC Webinar 090109.doc

Cheers,

Lesley

Lesley Jantarasami
US EPA, Climate Change Division
Climate Science & Impacts Branch
202.343.9929
202.343.2202 (fax)
Jantarasami.Lesley@epa.gov

EPA-EF-000856

EPA-633

Michael Kolian/DC/USEPA/US

To David Chalmers

09/11/2009 11:28 AM

cc Jason Samenow, Jeremy Martinich, Lesley Jantarasami,
Marcus Sarofim, Bill Perkins, William Perkins

bcc

Subject Re: 3281.1

Thanks David, (b)(5) Deliberative

David Chalmers

Mike: (b)(5) Deliberative

09/11/2009 10:34:24 AM

From: David Chalmers/DC/USEPA/US
To: William Perkins/DC/USEPA/US@EPA
Cc: Jason Samenow/DC/USEPA/US@EPA, Jeremy Martinich/DC/USEPA/US@EPA, Lesley Jantarasami/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Bill Perkins <perkins.william@epa.gov>
Date: 09/11/2009 10:34 AM
Subject: Re: 3281.1

Mike:

(b)(5) Deliberative

Cheers,

David Chalmers
ORISE Fellow
U.S. EPA, Climate Change Division
202.343.9814

William Perkins

Mike, ERG has parsed out 11 different...

09/11/2009 09:46:08 AM

From: William Perkins/DC/USEPA/US
To: Michael Kolian/DC/USEPA/US@EPA
Cc: David Chalmers/DC/USEPA/US@EPA, Jason Samenow/DC/USEPA/US@EPA, Jeremy Martinich/DC/USEPA/US@EPA, Lesley Jantarasami/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Bill Perkins <perkins.william@epa.gov>
Date: 09/11/2009 09:46 AM
Subject: Re: 3281.1

Mike,

(b)(5) Deliberative

(b)(5) Deliberative

EPA-EF-000857

(b)(5) Deliberative

Cheers,

Bill

Bill Perkins
Climate Change Adaptation Analyst
Climate Science and Impacts Branch
Climate Change Division
U.S. Environmental Protection Agency
perkins.william@epa.gov
(O) 202.343.9460
(F) 202.343.2202
(C) (b)(6)

Michael Kolian

(b)(5) Deliberative

09/11/2009 08:38:18 AM

From: Michael Kolian/DC/USEPA/US
To: Marcus Sarofim/DC/USEPA/US@EPA, David Chalmers/DC/USEPA/US@EPA, Jeremy Martinich/DC/USEPA/US@EPA, Bill Perkins <perkins.william@epa.gov>
Cc: Jason Samenow/DC/USEPA/US@EPA, Lesley Jantarasami/DC/USEPA/US@EPA
Date: 09/11/2009 08:38 AM
Subject: 3281.1

(b)(5) Deliberative

[attachment "EPA-HQ-OAR-2009-0171-3281.1.pdf" deleted by William Perkins/DC/USEPA/US]

We can discuss off-line too.

Cheers,
Mike

EPA-634

Lesley
Jantarasami/DC/USEPA/US
09/14/2009 10:21 AM

To Marcus Sarofim
cc
bcc
Subject Re:

Hey Marcus,

I was out on Friday, so I'm just now reading this.

(b)(5) Deliberative

Lesley

Marcus Sarofim Thanks! I'm interested by the commen... 09/10/2009 06:00:03 PM

From: Marcus Sarofim/DC/USEPA/US
To: Lesley Jantarasami/DC/USEPA/US@EPA
Date: 09/10/2009 06:00 PM
Subject: Re:

Thanks! I'm interested by the comment

(b)(5) Deliberative

-Marcus

Marcus C. Sarofim, PhD
phone: 202-343-9993
fax: 202-343-2202
1310 L Street 256C
AAAS Science & Technology Policy Fellow
with the EPA Climate Division

Lesley Jantarasami Hey Marcus, Here are some notes I... 09/10/2009 05:49:52 PM

From: Lesley Jantarasami/DC/USEPA/US
To: Marcus Sarofim/DC/USEPA/US@EPA
Date: 09/10/2009 05:49 PM
Subject:

Hey Marcus,

Here are some notes I took during the webinar this afternoon. Most, if not all, of it was information we already knew, so I'm not sure how helpful it was. But we do have contacts if we want to ask follow-up questions.

[attachment "Notes RTC Webinar 090109.doc" deleted by Marcus Sarofim/DC/USEPA/US]

EPA-EF-000859

Cheers,

Lesley

Lesley Jantarasami
US EPA, Climate Change Division
Climate Science & Impacts Branch
202.343.9929
202.343.2202 (fax)
Jantarasami.Lesley@epa.gov

EPA-635

Lesley
Jantarasami/DC/USEPA/US
09/14/2009 11:45 AM

To Rona Birnbaum
cc
bcc
Subject revisions

Hi Rona,

Here are the revisions to the schedule.

Thanks,

Lesley

(b)(5) Deliberative

Endangerment schedule for Final Action detailed 091409.doc

EPA-636

Ben DeAngelo/DC/USEPA/US

To Darrell Winner

09/14/2009 03:05 PM

cc

bcc

Subject AQ comment responses

Hi Darrell, actually starting going thru responses and now returning to it. (b)(5) Deliberative

[Redacted]

-Ben

EPA-637

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc

Subject UPGOAD F:\Endangerment\02_Comments and Responses\01_Sections\2.1.4, DBC + BJD, 091009.doc

(b)(5) Deliberative

- 2.1.4, DBC + BJD, 091009.doc

EPA-638

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc
Subject UPGOAD F:\Endangerment\02_Comments and Responses\01_Sections\2.3.1, DBC, 082809.doc

(b)(5) Deliberative

- 2.3.1, DBC, 082809.doc

EPA-639

Lesley
Jantarasami/DC/USEPA/US
09/14/2009 05:01 PM

To **Jeremy Martinich**
cc
bcc
Subject **RTC intro**

Here you go~

Lesley

(b)(5) Deliberative

Response to Comm Intro 090109.doc

EPA-640

David
Chalmers/DC/USEPA/US
09/14/2009 05:20 PM

To Jason Samenow
cc
bcc
Subject 2.1.5

A first cut attached.

(b)(5) Deliberative

It might
be a good idea for us to get this onto Quickr relatively soon in order to facilitate the necessary moves.

Cheers,
David

(b)(5) Deliberative

2.1.5, JPS+DBC, 091409.doc

EPA-641

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc
Subject UPGOAD F:\Endangerment\02_Comments and Responses\01_Sections\2.3.2, DBC, 082709.doc

(b)(5) Deliberative

- 2.3.2, DBC, 082709.doc

EPA-EF-000867

EPA-642

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc

Subject UPGRADE F:\Endangerment\02_Comments and Responses\01_Sections\Forestry comment summary 9_08_09 merge.doc

(b)(5) Deliberative

- Forestry comment summary 9_08_09 merge.doc

EPA-EF-000868

EPA-643

Michael Kolian/DC/USEPA/US

To Lesley Jantarasami

09/15/2009 11:22 AM

cc

bcc

Subject forestry and agriculture

Hi Lesley,

Please review the following two categories. Can you retain the comments and highlight for the time being and send back the updated versions when you've gone through them. I just want another version before it goes to quicker.

Thank you very much!

(b)(5) Deliberative

(b)(5) Deliberative

Forestry comment summary 9_08_09 merge.doc Agricultural Impacts comment response 9_08_09 merge.doc

EPA-EF-000869

EPA-644

David
Chalmers/DC/USEPA/US
09/15/2009 01:22 PM

To William Perkins
cc
bcc
Subject attached

(b)(5) Deliberative

CommentResponseOutline_090309 BJD.doc

David Chalmers
ORISE Fellow
U.S. EPA, Climate Change Division
202.343.9814

EPA-EF-000870

EPA-645

Marcus Sarofim

To

cc

bcc

Subject UPGRADE C:\Documents and Settings\msarofim\My Documents\WorkFolder\Tsd_Anpr\ResponseToComments\ResponseChapters\4.1.2.9.3 - Other Substances.doc

(b)(5) Deliberative

- 4.1.2.9.3 - Other Substances.doc

EPA-EF-000871

EPA-646

Marcus Sarofim

To

cc

bcc

Subject UPGRADE C:\Documents and Settings\msarofim\My Documents\WorkFolder\Tsd_Anpr\ResponseToComments\ResponseChapters\4.1.2.9.1 - Black Carbon.doc

(b)(5) Deliberative

- 4.1.2.9.1 - Black Carbon.doc

EPA-EF-000872

EPA-647

**Suzanne
Kocchi/DC/USEPA/US**
09/15/2009 03:55 PM

To Marcus Sarofim
cc
bcc

Subject Fw: volume 2

----- Forwarded by Suzanne Kocchi/DC/USEPA/US on 09/15/2009 03:53 PM -----

From: Carol Holmes/DC/USEPA/US
To: Suzanne Kocchi/DC/USEPA/US@EPA, Dina Kruger/DC/USEPA/US@EPA, Bill Irving/DC/USEPA/US@EPA, Deborah Ottinger/DC/USEPA/US@EPA, Sarah Froman/DC/USEPA/US@EPA
Cc: Patricia Embrey/DC/USEPA/US
Date: 09/15/2009 02:31 PM
Subject: volume 2

(b)(5) Deliberative ACP AWP

Volume 2 RTC 9-13-09 clean csh.doc

Confidential communication for internal deliberations only; Attorney-client, attorney work product and/or enforcement privilege; Do not distribute outside EPA or DOJ

Carol S. Holmes
Office of General Counsel
U.S. Environmental Protection Agency
1200 Pennsylvania Ave, NW (MC 2344A)
Washington, DC 20460
Phone (202) 564-8709
Fax (202) 564-5603

EPA-EF-000873

EPA-648

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc

Subject UPGRADE F:\Endangerment\02_Comments and Responses\01_Sections\Forestry comment summary 9_08_09 merge LCJ.doc

(b)(5) Deliberative

- Forestry comment summary 9_08_09 merge LCJ.doc

EPA-EF-000874

EPA-649

Michael Kolian
05/12/2010 10:09 AM

To
cc
bcc

Subject UPLoad C:\Documents and Settings\Owner\My
Documents\Ccd\TSD comment period\Forestry comment
summary 9_08_09 merge LCJ.doc

(b)(5) Deliberative

- Forestry comment summary 9_08_09 merge LCJ.doc

EPA-650

Lesley
Jantarasami/DC/USEPA/US
09/15/2009 04:08 PM

To Michael Kolian
cc
bcc
Subject Re: forestry and agriculture

Hey Mike,

Here are my comments on the Forestry section; still working on Ag. I think they are looking good! I made some suggestions about (b)(5) Deliberative

[Redacted]

Let me know if I can do anything else!

Lesley

(b)(5) Deliberative

Forestry comment summary 9_08_09 merge LCJ.doc

Michael Kolian Hi Lesley, Please review the following t... 09/15/2009 11:22:35 AM

From: Michael Kolian/DC/USEPA/US
To: Lesley Jantarasami/DC/USEPA/US@EPA
Date: 09/15/2009 11:22 AM
Subject: forestry and agriculture

Hi Lesley,

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Thank you very much!

[attachment "Forestry comment summary 9_08_09 merge.doc" deleted by Lesley Jantarasami/DC/USEPA/US] [attachment "Agricultural Impacts comment response 9_08_09 merge.doc" deleted by Lesley Jantarasami/DC/USEPA/US]

EPA-EF-000876

EPA-651

Michael Kolian/DC/USEPA/US
09/15/2009 04:44 PM

To Marcus Sarofim
cc
bcc

Subject Re: Chamber of Commerce Humor of the Day

Please add it to your response! Classic.

Marcus Sarofim On their CD, the Chamber of Commerc... 09/14/2009 06:51:15 PM

From: Marcus Sarofim/DC/USEPA/US
To: Michael Kolian/DC/USEPA/US@EPA
Cc: David Chalmers/DC/USEPA/US@EPA, Jason Samenow/DC/USEPA/US@EPA, Jeremy Martinich/DC/USEPA/US@EPA, Lesley Jantarasami/DC/USEPA/US@EPA, Bill Perkins <perkins.william@epa.gov>, Ben DeAngelo/DC/USEPA/US@EPA
Date: 09/14/2009 06:51 PM
Subject: Chamber of Commerce Humor of the Day

On their CD, the Chamber of Commerce kindly provided Gleadow et al., 1998. "Enhanced CO2 alters the relationship between photosynthesis and defence in cyanogenic Eucalyptus cladocalyx F. Muell,"

(b)(5) Deliberative "Focussing on nitrogen, we have shown that foliage grown at a high CO2 concentration is depleted in nitrogen while maintaining the cyanogenic glycoside content; taken together, these qualities present a significantly less palatable combination to herbivores than that presented by the control foliage"

(b)(5) Deliberative

-Marcus

Marcus C. Sarofim, PhD
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fax: 202-343-2202
1310 L Street 256C
AAAS Science & Technology Policy Fellow
with the EPA Climate Division

EPA-EF-000877

EPA-652

Jason
Samenow/DC/USEPA/US
09/15/2009 06:16 PM

To Lesley Jantarasami
cc
bcc

Subject Re: need help to finish by Friday?

Here are a few...though they don't yet have full references/citations. That will have to come later.

The rest are works in progress...

Thanks for your help.

Jason

(b)(5) Deliberative

(b)(5) Deliberative

(b)(5) Deliberative

11-6-USP-samenow.doc 4-3-uncertainty-samenow.doc 9-5-6-cryosphere-samenow.doc

Lesley Jantarasami Hey guys, If it would be helpful to y... 09/15/2009 05:12:32 PM

From: Lesley Jantarasami/DC/USEPA/US
To: Jeremy Martinich/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Jason Samenow/DC/USEPA/US@EPA, David Chalmers/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US, William Perkins/DC/USEPA/US@EPA
Date: 09/15/2009 05:12 PM
Subject: need help to finish by Friday?

Hey guys,

If it would be helpful to you, feel free to send me any of your drafts for general review / copyediting / formatting before they "go live" on Quickr. Consider me your one-woman support team :)

Happy writing!

Lesley

EPA-EF-000878

EPA-653

Suzanne
Kocchi/DC/USEPA/US
09/15/2009 09:29 PM

To Marcus Sarofim
cc Ben DeAngelo, Jason Samenow
bcc
Subject Re: Fw: volume 2

Marcus - There is not attachment - can you send it again?

Thanks -
Suzie
Marcus Sarofim

----- Original Message -----

From: Marcus Sarofim
Sent: 09/15/2009 07:16 PM EDT
To: Suzanne Kocchi
Cc: Ben DeAngelo; Jason Samenow
Subject: Re: Fw: volume 2

Hi Suzie,

I've made a few changes in the attached document.

1) [REDACTED] (b)(5) Deliberative

2) A previous commenter noted that it was important to state where we agree with commenters: [REDACTED]

3) [REDACTED] (b)(5) Deliberative
[REDACTED] If Ben

and Jason have any ideas, I can look at this again tomorrow...

-Marcus

Marcus C. Sarofim, PhD
phone: 202-343-9993
fax: 202-343-2202
1310 L Street 256C
AAAS Science & Technology Policy Fellow
with the EPA Climate Division

Suzanne Kocchi ----- Forwarded by Suzanne Kocchi/D... 09/15/2009 03:55:46 PM

From: Suzanne Kocchi/DC/USEPA/US
To: Marcus Sarofim/DC/USEPA/US@EPA
Date: 09/15/2009 03:55 PM
Subject: Fw: volume 2

----- Forwarded by Suzanne Kocchi/DC/USEPA/US on 09/15/2009 03:53 PM -----

From: Carol Holmes/DC/USEPA/US
To: Suzanne Kocchi/DC/USEPA/US@EPA, Dina Kruger/DC/USEPA/US@EPA, Bill Irving/DC/USEPA/US@EPA, Deborah Ottinger/DC/USEPA/US@EPA, Sarah Froman/DC/USEPA/US@EPA
Cc: Patricia Embrey/DC/USEPA/US
Date: 09/15/2009 02:31 PM
Subject: volume 2

[attachment "Volume 2 RTC 9-13-09 clean csh.doc" deleted by Marcus Sarofim/DC/USEPA/US]
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Carol S. Holmes
Office of General Counsel
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Washington, DC 20460
Phone (202) 564-8709
Fax (202) 564-5603

EPA-654

Marcus Sarofim/DC/USEPA/US
09/16/2009 10:13 AM

To Suzanne Kocchi
cc Ben DeAngelo, Jason Samenow
bcc
Subject Re: Fw: volume 2

(b)(5) Deliberative

Volume 2 RTL 9-13-09 clean-mcs.doc

Here's the attachment I forgot last night, with (b)(5) Deliberative

-Marcus

Marcus C. Sarofim, PhD
phone: 202-343-9993
fax: 202-343-2202
1310 L Street 256C
AAAS Science & Technology Policy Fellow
with the EPA Climate Division

Suzanne Kocchi For your #2 - (b)(5) Deliberative 09/15/2009 09:34:52 PM

From: Suzanne Kocchi/DC/USEPA/US
To: Marcus Sarofim/DC/USEPA/US@EPA
Cc: Ben DeAngelo/DC/USEPA/US@EPA, Jason Samenow/DC/USEPA/US@EPA
Date: 09/15/2009 09:34 PM
Subject: Re: Fw: volume 2

For your #2 - (b)(5) Deliberative
For your #3 (b)(5) Deliberative

Thanks - Suzie

Marcus Sarofim

----- Original Message -----

From: Marcus Sarofim
Sent: 09/15/2009 07:16 PM EDT
To: Suzanne Kocchi
Cc: Ben DeAngelo; Jason Samenow
Subject: Re: Fw: volume 2

Hi Suzie,

I've made a few changes in the attached document.

1) (b)(5) Deliberative

2) A previous commenter noted that it was important to state where we agree with commenters: (b)(5) Deliberative

(b)(5) Deliberative

3) (b)(5) Deliberative

. If Ben
and Jason have any ideas, I can look at this again tomorrow...

-Marcus

Marcus C. Sarofim, PhD
phone: 202-343-9993
fax: 202-343-2202
1310 L Street 256C
AAAS Science & Technology Policy Fellow
with the EPA Climate Division

Suzanne Kocchi ----- Forwarded by Suzanne Kocchi/D... 09/15/2009 03:55:46 PM

From: Suzanne Kocchi/DC/USEPA/US
To: Marcus Sarofim/DC/USEPA/US@EPA
Date: 09/15/2009 03:55 PM
Subject: Fw: volume 2

----- Forwarded by Suzanne Kocchi/DC/USEPA/US on 09/15/2009 03:53 PM -----

From: Carol Holmes/DC/USEPA/US
To: Suzanne Kocchi/DC/USEPA/US@EPA, Dina Kruger/DC/USEPA/US@EPA, Bill Irving/DC/USEPA/US@EPA, Deborah Ottinger/DC/USEPA/US@EPA, Sarah Froman/DC/USEPA/US@EPA
Cc: Patricia Embrey/DC/USEPA/US
Date: 09/15/2009 02:31 PM
Subject: volume 2

[attachment "Volume 2 RTC 9-13-09 clean csh.doc" deleted by Marcus Sarofim/DC/USEPA/US]
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Fax (202) 564-5603

EPA-655

Doug Grano/RTP/USEPA/US
09/16/2009 11:24 AM

To Darrell Winner
cc
bcc

Subject Re: Continued discussion on response to public comments
re: TSD AQ

Darrell--

Did you receive any comments on the 9-3 draft . . . I have not. Below are a few minor comments on the TSD and RTC. Also a few edits to the RTC are attached. I think it's time to send these out to a larger review, including OGC. . . let's discuss.


--Doug

In the TSD (b)(5) Deliberative
[Redacted]

In the RTC,
(b)(5) Deliberative
[Redacted]

(b)(5) Deliberative
[Redacted]
RTC AQ 9-16.doc

Re: Continued discussion on response to public comments re: TSD AQ

Re: Continued discussion on response to public comments re : TSD AQ 

Darrell Winner to: Anne Grambsch, Ben DeAngelo, Bryan Hubbell, Carey Jang, Chris Weaver, Doug Grano, Erika Sasser, Larry Wallace, Marcus Sarofim, Michael Kolian, Pat Dolwick, Phil Lorang, Rona Birnbaum, Sara Terry, John Dawson, Bryan Bloomer 09/03/2009 06:30 PM

Thanks to the hard work of Doug Grano, John Dawson, and Bryan Bloomer, we now have a complete draft of responses. Please review and edit these as soon as possible:

[attachment "RTC AQ 9-03.doc" deleted by Doug Grano/RTP/USEPA/US]

EPA-EF-000883

(b)(5) Deliberative

[attachment "Revisions to AQ section of TSD 0903.doc" deleted by Doug Grano/RTP/USEPA/US]

Please send your comments to me and Doug, by COB Wed if possible. We will coordinate on changes to the draft and schedule a phone conference if it appears necessary from the comments.

-darrell

Darrell Winner, Ph.D.
Director, Applied Science Division
National Center for Environmental Research
winner.darrell@epa.gov
phone 202-343-9748
fax 202-233-0677

Regular mail:
USEPA/ORD/NCER/ESRD (8726F)
1200 Pennsylvania Ave NW
Washington, DC 20460-0001

FedEx/Courier:
USEPA/ORD/NCER/ESRD
Room 3111
1025 F St NW
Washington, DC 20004

(Woodies Building / metro stop: Metro Center)

Darrell Winner We now plan to have a draft response f... 08/27/2009 02:21:30 PM

From: Darrell Winner/DC/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/27/2009 02:21 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

We now plan to have a draft response for all the comments to the group before the end of next week. Please reserve some time either right before or after the labor day weekend to review and edit these responses.

-darrell

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Director, Applied Science Division
National Center for Environmental Research
winner.darrell@epa.gov
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EPA-EF-000884

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Washington, DC 20460-0001

FedEx/Courier:
USEPA/ORD/NCER/ESRD
Room 3104
1025 F St NW
Washington, DC 20004

(Woodies Building / metro stop: Metro Center)

Darrell Winner

(b)(5) Deliberative

08/25/2009 04:04:13 PM

From: Darrell Winner/DC/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/25/2009 04:04 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

(b)(5) Deliberative

(b)(5) Deliberative

-darrell

Darrell Winner, Ph.D.
Director, Applied Science Division
National Center for Environmental Research
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1025 F St NW
Washington, DC 20004

(Woodies Building / metro stop: Metro Center)

EPA-EF-000885

Ben DeAngelo Quick clarification.. (b)(5) Deliberative 08/24/2009 06:15:28 PM

From: Ben DeAngelo/DC/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/24/2009 06:15 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Quick clarification.. (b)(5) Deliberative

Also discussed with Doug that I'd like to (b)(5) Deliberative

Ben DeAngelo Thanks all for these responses. I think... 08/24/2009 03:44:41 PM

From: Ben DeAngelo/DC/USEPA/US
To: Chris Weaver/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/24/2009 03:44 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Thanks all for these responses. I think (b)(5) Deliberative

Primarily for Darrell and Doug,

Are you satisfied with this draft for now?

Are there other (b)(5) Deliberative

(b)(5) Deliberative

I think by the end of this week I want to have a good sense of what our responses are to all major comments, and see if over the next two weeks major progress to updating the TSD can also be made.

Thanks!!

-Ben

Chris Weaver Thanks, Doug. A couple quick commen... 08/19/2009 05:22:56 PM

From: Chris Weaver/DC/USEPA/US
To: Doug Grano/RTP/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/19/2009 05:22 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Thanks, Doug. A couple quick comments from me ...
-Chris

[attachment "Endangerment Proposal RTC AQ responses 8 19b weaver comments.doc" deleted by Darrell Winner/DC/USEPA/US]

Christopher P. Weaver, Ph.D.
Global Change Research Program

U.S. Environmental Protection Agency
Office of Research and Development
National Center for Environmental Assessment

Tel: +1 703 347 8621
Fax: +1 703 347 8694
Email: weaver.chris@epa.gov

Mailing address:
US EPA (8601-P)
1200 Pennsylvania Ave.
Washington, DC 20460

Doug Grano Here is a revised version based on com... 08/19/2009 12:11:15 PM

From: Doug Grano/RTP/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA
Date: 08/19/2009 12:11 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Here is a revised version based on comments today from Pat and Erika/Beth.
--Doug

[attachment "Endangerment Proposal RTC AQ responses 8 19b.doc" deleted by Chris Weaver/DC/USEPA/US]

All--

I've accepted the changes from the 8-13 document and made a few new changes. The changes focus

(b)(5) Deliberative

--Doug

Sara Terry

I've made some comments (b)(5) Deliberative

08/13/2009 12:40:00 PM

From: Sara Terry/RTP/USEPA/US
To: Doug Grano/RTP/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA
Date: 08/13/2009 12:40 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

I've made some comments

(b)(5) Deliberative

. Here is our revision so far.

(b)(5) Deliberative

[attachment "Endangerment Proposal RTC AQ responses 8 13.doc" deleted by Doug Grano/RTP/USEPA/US]

Thanks,
Sara

Doug Grano

Here's a start. Please review and send...

08/10/2009 05:09:01 PM

From: Doug Grano/RTP/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/10/2009 05:09 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Here's a start. Please review and send additions and edits.

--Doug

[attachment "AQ responses dg8-10.doc" deleted by Sara Terry/RTP/USEPA/US]

EPA-656

Michael Kolian/DC/USEPA/US
09/16/2009 11:37 AM

To Ben DeAngelo

cc

bcc

Subject forestry

Ben,

Here's another version of forestry comment/summary. Let me know if you don't have time review and would rather I just add to quickr.

(b)(5) Deliberative

Forestry comment summary 9_16a_09 merge.doc

EPA-657

Suzanne
Kocchi/DC/USEPA/US
09/16/2009 11:51 AM

To Sarah Froman
cc Bill Irving, Carol Holmes, Deborah Ottinger, Marcus Sarofim,
Jason Samenow, Ben DeAngelo
bcc
Subject Re: volume 2

Thanks Sarah - [REDACTED] (b)(5) Deliberative

Sarah Froman Hi Carol et. al., Here is a response [REDACTED] (b)(5) Deliberative 09/16/2009 11:07:54 AM

From: Sarah Froman/DC/USEPA/US
To: Carol Holmes/DC/USEPA/US@EPA
Cc: Bill Irving/DC/USEPA/US@EPA, Deborah Ottinger/DC/USEPA/US@EPA, Dina Kruger/DC/USEPA/US@EPA, Patricia Embrey/DC/USEPA/US@EPA, Suzanne Kocchi/DC/USEPA/US@EPA
Date: 09/16/2009 11:07 AM
Subject: Re: volume 2

Hi Carol et. al.,

Here is a response [REDACTED] (b)(5) Deliberative

[REDACTED]

[REDACTED]

Cheers,

Sarah

(b)(5) Deliberative

Volume 2 RTC 9-13-09 clean csh smf.doc

Carol Holmes sorry -- my email went wacky. (b)(5) Deliberative 09/15/2009 02:32:43 PM

From: Carol Holmes/DC/USEPA/US
To: Carol Holmes/DC/USEPA/US@EPA
Cc: Bill Irving/DC/USEPA/US@EPA, Deborah Ottinger/DC/USEPA/US@EPA, Dina Kruger/DC/USEPA/US@EPA, Patricia Embrey/DC/USEPA/US, Sarah Froman/DC/USEPA/US@EPA, Suzanne Kocchi/DC/USEPA/US@EPA
Date: 09/15/2009 02:32 PM
Subject: Re: volume 2

sorry -- my email went wacky. (b)(5) Deliberative

. THANKS

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Washington, DC 20460
Phone (202) 564-8709
Fax (202) 564-5603

EPA-658

Marcus Sarofim/DC/USEPA/US
09/16/2009 12:29 PM

To Suzanne Kocchi
cc Ben DeAngelo, Jason Samenow
bcc
Subject Re: volume 2

It certainly looks fine to me. (b)(5) Deliberative

-Marcus

Marcus C. Sarofim, PhD
phone: 202-343-9993
fax: 202-343-2202
1310 L Street 256C
AAAS Science & Technology Policy Fellow
with the EPA Climate Division

Suzanne Kocchi Thanks Sarah (b)(5) Deliberative 09/16/2009 11:51:37 AM

From: Suzanne Kocchi/DC/USEPA/US
To: Sarah Froman/DC/USEPA/US@EPA
Cc: Bill Irving/DC/USEPA/US@EPA, Carol Holmes/DC/USEPA/US@EPA, Deborah Ottinger/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Jason Samenow/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA
Date: 09/16/2009 11:51 AM
Subject: Re: volume 2

Thanks Sarah (b)(5) Deliberative

Sarah Froman Hi Carol et. al., Here is a response (b)(5) Deliberative 09/16/2009 11:07:54 AM

From: Sarah Froman/DC/USEPA/US
To: Carol Holmes/DC/USEPA/US@EPA
Cc: Bill Irving/DC/USEPA/US@EPA, Deborah Ottinger/DC/USEPA/US@EPA, Dina Kruger/DC/USEPA/US@EPA, Patricia Embrey/DC/USEPA/US@EPA, Suzanne Kocchi/DC/USEPA/US@EPA
Date: 09/16/2009 11:07 AM
Subject: Re: volume 2

Hi Carol et. al.,

Here is a response (b)(5) Deliberative

[Redacted]

(b)(5) Deliberative



Cheers,

Sarah

[attachment "Volume 2 RTC 9-13-09 clean csh smf.doc" deleted by Marcus Sarofim/DC/USEPA/US]

Carol Holmes sorry -- my email went wacky. (b)(5) Deliberative 09/15/2009 02:32:43 PM

From: Carol Holmes/DC/USEPA/US
To: Carol Holmes/DC/USEPA/US@EPA
Cc: Bill Irving/DC/USEPA/US@EPA, Deborah Ottinger/DC/USEPA/US@EPA, Dina Kruger/DC/USEPA/US@EPA, Patricia Embrey/DC/USEPA/US, Sarah Froman/DC/USEPA/US@EPA, Suzanne Kocchi/DC/USEPA/US@EPA
Date: 09/15/2009 02:32 PM
Subject: Re: volume 2

sorry -- my email went wacky. (b)(5) Deliberative



THANKS

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Washington, DC 20460
Phone (202) 564-8709
Fax (202) 564-5603

EPA-659

David
Chalmers/DC/USEPA/US
09/16/2009 02:04 PM

To Lesley Jantarasami
cc
bcc

Subject Re: need help to finish by Friday?

Hi Lesley,

If you have time, I'd appreciate any feedback you might have on the attached summaries/responses on
(b)(5) Deliberative

Any thoughts or suggestions are appreciated. The doc is already up on Quickr, so feel free to make edits directly from there if you'd like.

I'm sure you're slammed, but if you happen to have time to look at any of the other responses I've already loaded onto Quickr, they could doubtless benefit from revisions and polishing.

Many thanks,
David

(b)(5) Deliberative

2.1.7, DBC, 091609.doc

Lesley Jantarasami Hey guys, If it would be helpful to y... 09/15/2009 05:12:32 PM

From: Lesley Jantarasami/DC/USEPA/US
To: Jeremy Martinich/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Jason Samenow/DC/USEPA/US@EPA, David Chalmers/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US, William Perkins/DC/USEPA/US@EPA
Date: 09/15/2009 05:12 PM
Subject: need help to finish by Friday?

Hey guys,

If it would be helpful to you, feel free to send me any of your drafts for general review / copyediting / formatting before they "go live" on Quickr. Consider me your one-woman support team :)

Happy writing!

Lesley

EPA-EF-000894

EPA-660

Marcus Sarofim

To

cc

bcc

Subject UPLOAD C:\Documents and Settings\msarofim\My Documents\WorkFolder\Tsd_Anpr\ResponseToComments\ResponseChapters\4.1.2.9 - Additional Substances.doc

(b)(5) Deliberative

- 4.1.2.9 - Additional Substances.doc

EPA-EF-000895

EPA-661

Marcus Sarofim

To

cc

bcc

Subject UPGRADE C:\Documents and Settings\msarofim\My Documents\WorkFolder\Tsd_Anpr\ResponseToComments\ResponseChapters\2.3.2.1 Other Substances with Radiative Forcing Effects.doc

(b)(5) Deliberative

- 2.3.2.1 Other Substances with Radiative Forcing Effects.doc

EPA-662

Marcus Sarofim

To

cc

bcc

Subject UPGRADE C:\Documents and Settings\msarofim\My Documents\WorkFolder\Tsd_Anpr\ResponseToComments\ResponseChapters\4.1.2.8 - Sulfure Hexafluoride.doc

(b)(5) Deliberative

- 4.1.2.8 - Sulfure Hexafluoride.doc

EPA-EF-000897

EPA-663

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc

Subject UPGRADE F:\Endangerment\02_Comments and Responses\01_Sections\Agricultural Impacts comment response 9_08_09 merge LCJ.doc

(b)(5) Deliberative

- Agricultural Impacts comment response 9_08_09 merge LCJ.doc

EPA-EF-000898

EPA-664

Michael Kolian
05/12/2010 10:09 AM

To
cc
bcc

Subject UPGOAD C:\Documents and Settings\Owner\My Documents\Ccd\TSD comment period\Agricultural Impacts comment response 9_17_09 merge LCJ.doc

(b)(5) Deliberative

- Agricultural Impacts comment response 9_17_09 merge LCJ.doc

EPA-665

Lesley
Jantarasami/DC/USEPA/US
09/16/2009 04:31 PM

To Michael Kolian
cc
bcc
Subject Re: forestry and agriculture

Hey there,

Here is the ag section at last (b)(5) Deliberative I've also attached a study about climate impacts on wine grapes that may be helpful for one of your comment responses (I noted where in a comment bubble). Let me know if you have any questions or need any more sections reviewed.

(b)(5) Deliberative



Agricultural Impacts comment response 9_08_09 merge LCJ.doc PNAS_Wine Impacts.pdf

Cheers,

Lesley

Michael Kolian Lesley, that's terrific! (b)(5) Deliberative 09/15/2009 04:51:29 PM

From: Michael Kolian/DC/USEPA/US
To: Lesley Jantarasami/DC/USEPA/US@EPA
Date: 09/15/2009 04:51 PM
Subject: Re: forestry and agriculture

Lesley, that's terrific! (b)(5) Deliberative

I'm very happy your looking at these.

Lesley Jantarasami Hey Mike, Here are my comments... 09/15/2009 04:08:47 PM

From: Lesley Jantarasami/DC/USEPA/US
To: Michael Kolian/DC/USEPA/US@EPA
Date: 09/15/2009 04:08 PM
Subject: Re: forestry and agriculture

Hey Mike,

Here are my comments on the Forestry section; still working on Ag. I think they are looking good! (b)(5) Deliberative

Let me know if I can do anything else!

Lesley

[attachment "Forestry comment summary 9_08_09 merge LCJ.doc" deleted by Michael

EPA-EF-000900

Kolian/DC/USEPA/US]

Michael Kolian Hi Lesley, Please review the following t... 09/15/2009 11:22:35 AM

From: Michael Kolian/DC/USEPA/US
To: Lesley Jantarasami/DC/USEPA/US@EPA
Date: 09/15/2009 11:22 AM
Subject: forestry and agriculture

Hi Lesley,

Please review the following two categories. Can you retain the comments and highlight for the time being and send back the updated versions when you've gone through them. I just want another version before it goes to quicker.

Thank you very much!

[attachment "Forestry comment summary 9_08_09 merge.doc" deleted by Lesley Jantarasami/DC/USEPA/US] [attachment "Agricultural Impacts comment response 9_08_09 merge.doc" deleted by Lesley Jantarasami/DC/USEPA/US]

Extreme heat reduces and shifts United States premium wine production in the 21st century

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Premium wine production is limited to regions climatically conducive to growing grapes with balanced composition and varietal typicity. Three central climatic conditions are required: (i) adequate heat accumulation; (ii) low risk of severe frost damage; and (iii) the absence of extreme heat. Although wine production is possible in an extensive climatic range, the highest-quality wines require a delicate balance among these three conditions. Although historical and projected average temperature changes are known to influence global wine quality, the potential future response of wine-producing regions to spatially heterogeneous changes in extreme events is largely unknown. Here, by using a high-resolution regional climate model forced by the Intergovernmental Panel on Climate Change Special Report on Emission Scenarios A2 greenhouse gas emission scenario, we estimate that potential premium winegrape production area in the conterminous United States could decline by up to 81% by the late 21st century. While increases in heat accumulation will shift wine production to warmer climate varieties and/or lower-quality wines, and frost constraints will be reduced, increases in the frequency of extreme hot days (>35°C) in the growing season are projected to eliminate winegrape production in many areas of the United States. Furthermore, grape and wine production will likely be restricted to a narrow West Coast region and the Northwest and Northeast, areas currently facing challenges related to excess moisture. Our results not only imply large changes for the premium wine industry, but also highlight the importance of incorporating fine-scale processes and extreme events in climate-change impact studies.

climate change | enology | grape | viticulture | winegrape

A number of observations indicate that warming has occurred during the late 20th and early 21st centuries at the Earth's surface (1), in the troposphere (2–4), and in the oceans (5). The majority of this warming has likely been caused by anthropogenic greenhouse gas (GHG) emissions (6), and if such emissions continue unabated, global mean temperatures are likely to rise by 2–6°C over the next century (1). This mean global warming will likely manifest itself over a range of spatial and temporal scales, altering mean seasonal climate (e.g., ref. 7), interannual climate variability (e.g., ref. 8), and the frequency and magnitude of extreme events (e.g., refs. 9–11).

Such climatic changes could have a wide variety of important impacts on sectors such as human health (12), biological invasions (13), species extinctions (14), and water (15) and energy (16) resources. Because the quality and production of cultivated crops are directly influenced by local climate variables, agricultural systems may be particularly susceptible to climate change. For at least five reasons, the cultivation of grapes for the production of premium wine provides an optimal case for assessing potential impacts of climate change. First, premium wines are produced conterminously with human habitation and recording of climate and weather variables. Second, premium wines are intensively studied, both analytically and aesthetically, yielding long time series of response variables (17). Third, although technological innovations are an important influence

on wine quality, premium wine is fundamentally limited by the availability of high-quality winegrapes. Fourth, high-quality winegrapes are produced almost exclusively in a narrow climatic range characterized by a lack of both extreme heat and extreme cold. Fifth, premium wine production is of intense economic and cultural importance in the United States, which ranks as the fourth largest grape producer in the world with ≈6 million tons harvested (3.5 million tons for winegrapes alone) at an economic value of \$2.9 billion annually (18). California alone accounts for >90% of U.S. production with 2.7 million tons of winegrapes produced on >500,000 acres (19). In California, the wine industry has an overall economic impact of >\$45 billion annually (Wine Institute of California, www.wineinstitute.org).

Based on these premises, we investigate the response of the distribution of premium winegrape-producing regions in the United States to potential climate changes induced by increased GHG forcing. Although recent work has tested the response of these regions to potential mean changes in large-scale climate processes (17), it is now well established that fine-scale climate processes can regulate the response of regional climate, and in particular extreme climate, to enhanced GHG forcing (e.g., refs. 9 and 20–22). Our goal here is therefore to model the distribution of premium winegrape-producing regions at present and for simulated future climates across the conterminous United States, with specific emphasis on the effects of changes in the frequency and magnitude of extreme events on winegrape quality and production.

To date, studies assessing potential agricultural responses to 21st-century climate conditions (23) have lacked sufficient spatial resolution and/or spatial extent to resolve the range of climate processes likely to influence subregional-scale climate–agriculture relationships across large continental areas. The recent availability of a high-resolution (25 km) future climate simulation for the full conterminous United States (9) thereby offers a unique opportunity for continental-scale assessment of the potential impacts of future climate change on agricultural systems. We apply this high-resolution climate projection to the problem of premium winegrape production in the United States, first evaluating modern climate–winegrape relationships with a multivariate temperature approach at 1-km resolution, and then projecting the distribution of premium winegrape production in the late 21st century by using the high-resolution climate model simulations. Because they integrate projected changes in fine spatial- and temporal-scale climatic controls over a large spatial

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Abbreviations: GHG, greenhouse gas; HTCT, heat tolerant and cold tolerant; HICT, heat intolerant and cold tolerant; HTCI, heat tolerant and cold intolerant; HICI, heat intolerant and cold intolerant; RF, reference integration; RegCM3, Abdus Salam Institute for Theoretical Physics regional climate model.

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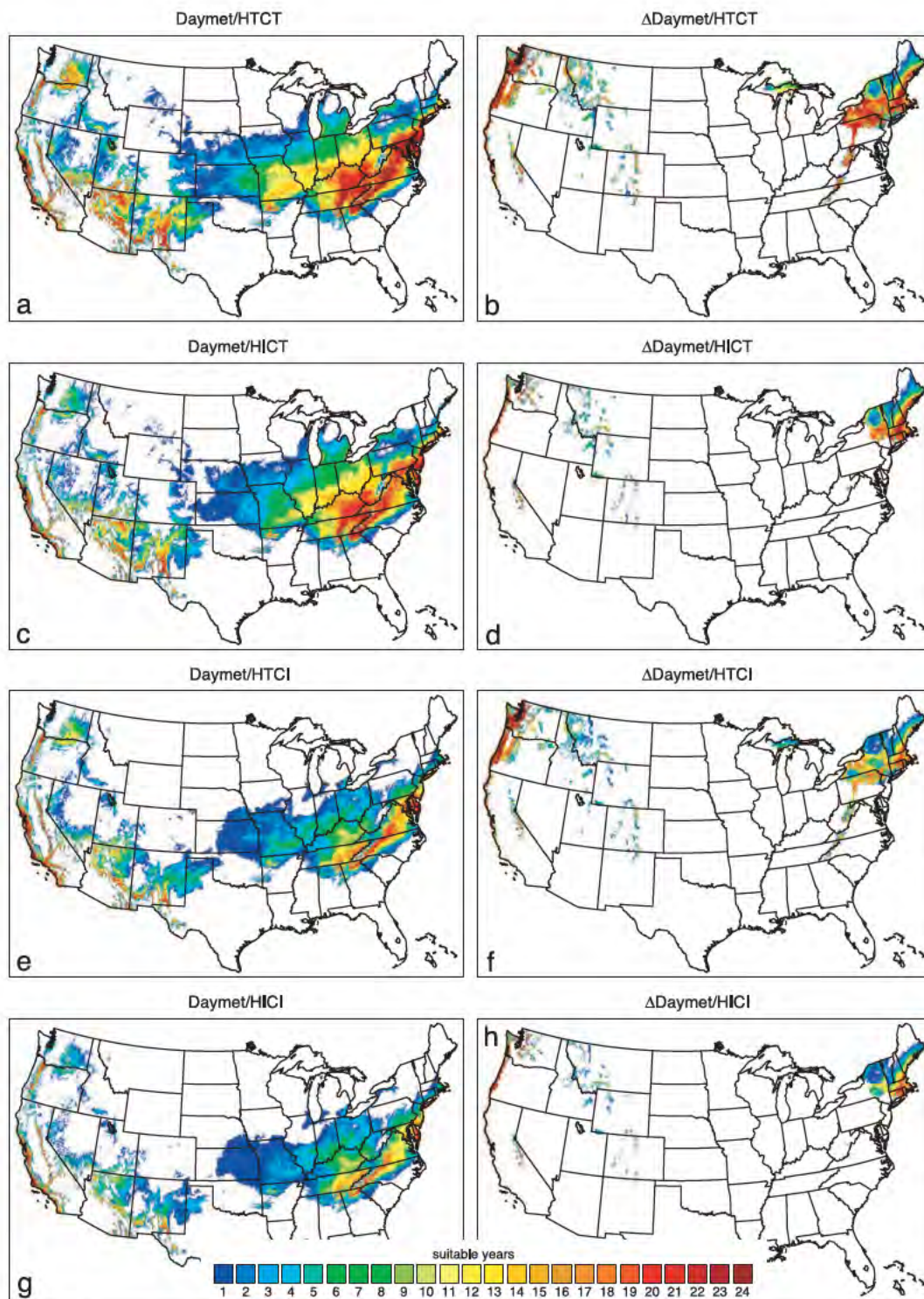


Fig. 1. Suitable years (of 24 possible) for premium winegrape production in the current (Daymet) and future (Δ Daymet) climates for four categories of grape/vine tolerance to extreme temperatures: HTCT (a and b), HICT (c and d), HTCI (e and f), and HICI (g and h).

extent, our results are not only relevant to an important agricultural industry, but are also illustrative of the potential impact of spatially heterogeneous changes in extreme event frequency and magnitude on natural and human systems.

Results

Our simulations suggest that the area available for production of premium winegrapes will both contract and shift over the next

century (Fig. 1). In the baseline Daymet climate (see *Methods*), premium winegrape production was consistently possible throughout much of the western United States, particularly the West Coast, the western slope of the Sierra Nevada Mountains, extensive regions of the Southwest, and much of the midwestern seaboard (Fig. 1 a, c, e, and g). Marginally favorable regions existed in many areas of the central United States. Selection of the thermal tolerance category [heat tolerant and cold tolerant

Table 1. Identification of potential premium winegrape-producing area for four heat/cold tolerance categories

Criterion	HTCT	HICT	HTCI	HICI
GS growing-degree days	1111–2499	1111–2499	1111–2499	1111–2499
GS average temperature	13–20°C	13–20°C	13–20°C	13–20°C
GS and RS hot days	14	7	14	7
W and S/F cold days	14	14	7	7
GS and RS diurnal temperature range	20°C	20°C	20°C	20°C

Pixels must have less than the specified number of hot/cold days (see text for details) and diurnal temperature range. Seasons: growing season (GS), April 1 to October 31; ripening season (RS), August 15 to October 15; winter (W), December 1 to February 28; spring (S), March 1 to May 31; fall (F), September 1 to November 30.

(HTCT), heat intolerant and cold tolerant (HICT), heat tolerant and cold intolerant (HTCI), heat intolerant and cold intolerant (HICI); see *Methods*] changed the number of suitable years and the distribution limits but not the overall features of the distribution. In the projected future Δ Daymet climate (see *Methods*), premium winegrape-producing regions were eliminated from most of the Daymet climate distribution. Production potential was almost completely eliminated in the Southwest and central United States; only high elevations were marginally suitable in the intermountain West. Consistently favorable regions remained along coastal California but new and high-quality regions were created in coastal Oregon and Washington. In HTCT, much of the Northeast was consistently favorable with other levels of tolerance reducing potential distribution.

The reduction in area between the Daymet and Δ Daymet climates was 81% when including marginal pixels (those with at least one valid climate year in the multivariate analysis; see *Methods* and Table 1), followed by 60% in the mean climate multivariate analysis and 14% in the Winkler analysis (Fig. 2). The shift to the Δ Daymet climate was also associated with variable shifts in the percent of pixels in the highest-quality Winkler regions I and II (see *Methods*). Considering only the Winkler analysis, i.e., no assessment of extreme temperatures, region I or II was 52% of the Daymet winegrape distribution and 28% of the Δ Daymet climate. Conversely, the percent of regions I and II in Δ Daymet actually increased when using either the multivariate marginal (36–60%) or multivariate mean climate (40–47%) accounting criteria (Fig. 2).

The reduction and shift in extent was the result of three central changes in climate metrics (Fig. 3). First, the average thermal condition, as represented by changes in growing-degree days (Fig. 3*a*) and growing-season average temperature (Fig. 3*b*), allowed potential winegrape-producing areas to move northward and toward higher elevations. Second, growing season (Fig. 3*c*) and ripening-season (Fig. 3*d*) hot days (detrimental to winegrape production; see *Methods*) increased by 3–8 weeks in much of the south-central and southwestern United States, thereby eliminating premium winegrape production from these regions. Third, especially in the Northeast winter (Fig. 3*e*) and Rocky Mountain spring/fall (Fig. 3*f*), cold days often declined by >3 weeks: in many of the coldest regions of the United States, the extreme cold limitation was reduced or eliminated.

From the baseline Winkler distribution of 3.54 million km² (identical to the Δ Daymet Winkler bar in Fig. 2), growing season hot days alone reduced winegrape production area by 2.84 million km² (Fig. 4). Cold days in winter and spring/fall were also important, reducing winegrape production area by \approx 1.5 million km², indicating that even in a warmed climate, extreme cold still limits winegrape production. Changes in growing season average

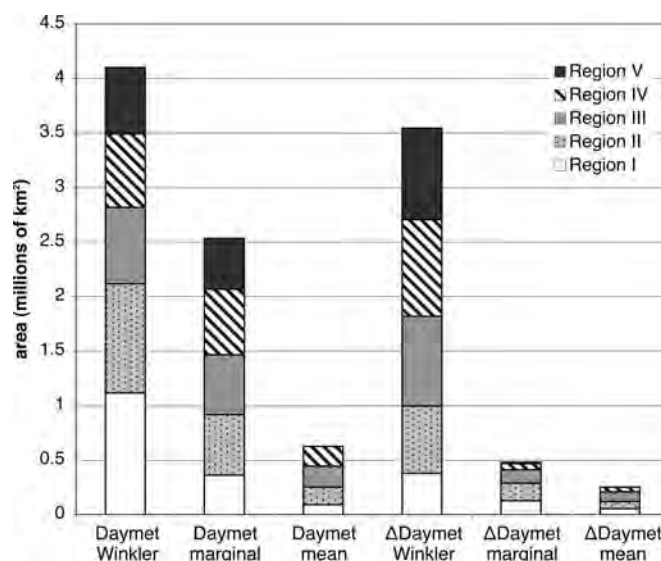


Fig. 2. Winegrape-producing area in the Daymet and Δ Daymet climates. For each climate, the three analyses are: (i) Winkler, the area defined by the presence of valid Winkler regions in the 24-year mean climate; (ii) marginal, showing area in the multivariate analysis with at least 1 year suitable for winegrape production; and (iii) mean, showing area in the multivariate analysis with the 24-year mean climate suitable for winegrape production.

temperature, ripening-season hot days, and diurnal temperature range were less important.

Based on the central importance of growing season hot days we recalculated the timing of the growing season in the Δ Daymet climate. We first calculated the average growing-degree day summation in the Daymet record from January 1 to April 1 and then calculated the average date for each pixel in the Δ Daymet climate at which this summation was reached. On average, the growing season began 22 days earlier in Δ Daymet with the largest changes along the West Coast. Based on the earlier initiation of the growing season but by using the same duration of 214 days, we recalculated, as described in *Methods*, Δ Daymet growing season hot days. Furthermore, as the timing shifted toward earlier growth, we also recalculated the ripening-season hot days. We then calculated the difference in total area for the mean climate multivariate analysis. Differences were minor: area increased by 4,700 km² when considering shifts in the growing and ripening seasons and by 4,100 km² when considering shifts in the growing season alone.

Discussion

Geographical shifts in historical and projected viticultural regions, as we have shown here, are not unusual. Vineyards planted during the “Little Optimum” in southern England and along the North and Baltic Seas (24) subsequently failed during the Little Ice Age. Burgundy spring–summer temperatures as warm as the 1990s have occurred several times in the region since 1370 (25). In the principal winegrape-growing regions of California, Oregon, and Washington, growing season temperatures have warmed by 0.9°C from 1948 to 2002, driven mostly by changes in minimum temperatures (26). In future climates, likely changes include: varietal suitability shifts in many regions (17); increased heat stress and irrigation pressure but decreased frost risk in Australia (27); northward migration of European wine-producing regions (28); and shifts in Australian wine production to southern and coastal areas (29).

However, our simulations suggest that consideration of mean climate alone may dramatically underestimate climate change impacts. Independent of both the category used to characterize

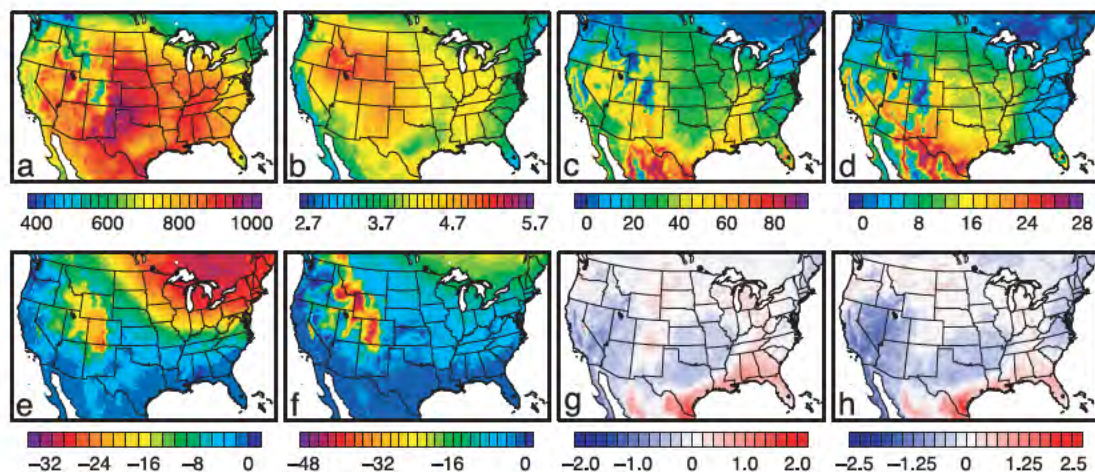


Fig. 3. Projected changes in climate variables (A2–RF). (a) Growing season growing-degree days. (b) Growing season average temperature (°C). (c) Growing season hot days (days per year). (d) Ripening-season hot days (days per year). (e) Winter cold days (days per year). (f) Spring and fall cold days (days per year). (g) Growing season diurnal temperature range (°C). (h) Ripening season diurnal temperature range (°C).

grape/vine tolerance to extreme temperature (Fig. 1) and the criteria used to assess climate metrics (Fig. 2), the area available for winegrape production is likely to decline in the 21st century Δ Daymet climate. In our analyses, the largest reductions were caused mainly by projected increases in the frequency of extreme hot days during the growing season (Figs. 3 and 4), the primary cause of which was the enhanced radiative forcing associated with higher GHG concentrations [A2 integration CO₂ concentrations are intermediate between the endpoints assessed by Hayhoe *et al.* (30)]. Additionally, climate system feedbacks enhanced this heating effect, as in the Southwest where increases in extreme hot events were associated with decreased summer soil moisture and enhanced anticyclonic flow aloft (9). Climate system feedbacks also contributed to areal expansion of potential winegrape production in the Mountain West where fine-scale albedo feedbacks associated with loss of snow cover enhanced the warming effects of elevated GHG concentrations.

The total predicted change in area available for winegrape production exhibits several important nuances. First, when assessed with Winkler regions alone, *i.e.*, ignoring the effects of extreme temperatures, the winegrape-producing area declined only slightly (Fig. 2). This projection may be considered to represent regional abilities to produce generic, not premium, wines. The strong reduction in regions I and II indicates that the overall shift would be toward higher yields of lower-quality fruit, resulting in lower-quality and lower-priced wines. Second, when including the effects of extreme temperatures but including marginal production areas, the central effect of the Δ Daymet

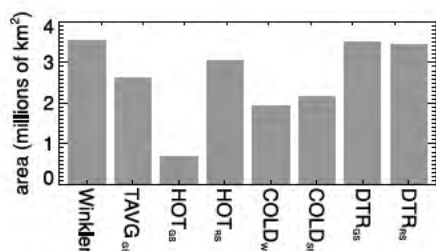


Fig. 4. Single factor reductions in winegrape-producing area for the heat-tolerant and cold-tolerant category. From left to right, factors are: Winkler regions; growing season average temperature (TAVG_{GS}); hot days in growing (HOT_{GS}) and ripening (HOT_{RS}) seasons; cold days in winter (COLD_W) and spring/fall (COLD_{SF}); and diurnal temperature range in growing (DTR_{GS}) and ripening (DTR_{RS}) seasons.

climate is to eliminate many of the marginal pixels in the Daymet climate (blue and green areas in Fig. 1), creating, in essence, high-quality refugia. Third, when considering the effects of extreme temperature but using the 24-year mean climate metrics (most representative of a consistent potential for premium winegrape production), the area in regions I and II declined from 0.25 million km² in the Daymet climate to 0.12 million km² in Δ Daymet (Fig. 2), implying that the area capable of producing the highest-quality, most expensive wines is likely to be reduced by >50%. Fourth, shifting the timing of the growing and ripening seasons had little effect on predicted Δ Daymet distributions, suggesting that the overall increase in extreme heat (Fig. 3 c and d) overwhelms more subtle shifts in the timing of growing season onset.

Further, projected climate changes shift premium winegrape production to high humidity/precipitation regions of the Pacific Northwest and New England. High humidity is associated with higher risk of quality-reducing factors such as various forms of rot (31) and powdery mildew (32), and higher frequency of raindrop impacts on leaves increases fungal dispersal (33). The refugial premium winegrape production areas, which are projected to experience increased atmospheric water vapor mixing ratio in the A2 climate (9), are therefore likely to require extensive pathology control measures and/or will experience declines in winegrape quality.

The projected decrease in potential winegrape-producing area is based on current vine stock characteristics and does not consider advances in viticultural technology or management, both of which may extend winegrape production in the current distribution. For example, grapevine breeding programs, which have historically focused on disease and cold resistance (34), will likely act to increase the development of heat-resistant vine stock. Specific viticultural techniques may also increase resistance to extreme heat (*e.g.*, ref. 35). DeBolt *et al.* (36) have identified the key gene for the enzymatic conversion of vitamin C to tartaric acid, the compound most influencing perceptions of wine quality, suggesting that, given continued genetic (37), breeding, and vineyard adaptation, the wine industry may be able to moderate the effects of increased extreme heat.

Conclusions

Changes in the frequency of extreme temperatures may have a more extreme effect on biological and agricultural systems than changes in mean climate. Here, using historical climate records and a regional climate model capable of resolving fine-scale

climate processes, we found that changes in mean climate between the late 20th century and the late 21st century caused only minor reductions in the total area available for winegrape production. However, when we included the effects of extreme temperatures, principally extreme heat in the growing season, areas marginally suitable for winegrape production in the current climate were nearly eliminated and the area capable of consistently producing grapes required for the highest-quality and highest-priced wines declined by >50%. These changes would have substantial effects on the wine industry in the United States. Based on these results, we strongly suggest that climate change impact studies continue to increase the use of high-resolution climate simulations capable of resolving changes in extreme climate events.

Methods

Current Potential Distribution. We used the Daymet dataset (ref. 38; www.daymet.org) 1980–2003 1-km gridded daily records of maximum and minimum temperature to assess potential premium winegrape-producing areas in the late 20th and early 21st century. We developed a winegrape production suitability screening system, as described below, in which we annually assessed whether or not each pixel was climatically suitable for premium winegrape production. The process thus yielded the number of years (of 24) in which premium winegrapes could be grown. Note that our process identifies thermally regulated potential winegrape production and does not consider moisture factors or the complete framework of “terroir”: the integral climate, soil, varietal, and cultural factors influencing local winegrape quality.

Although wines are produced in all 48 states of the conterminous United States, the cultivation of premium grapes for wine production is limited to specific regions. The exact delimitation of these regions in the late 20th and early 21st century is, however, subjective. A definition based on the climate characteristics of the Napa and Sonoma Valleys, for example, will preclude the identification of the Willamette Valley in western Oregon, in which high-quality pinot noir is produced. Assignment of thresholds for extreme temperature tolerance is similarly subjective. For example, although several days of temperatures exceeding 30°C can benefit ripening potential, prolonged periods can induce heat stress in the plant and lead to premature véraison, the elimination of the berries through abscission, permanent enzyme inactivation, and partial or total failure of flavor ripening (39); the transition point is varietally dependent. Injury and/or death as a direct or indirect result of the formation of ice within tissues and the resulting stresses to the vine can dramatically affect yield and/or quality but cold hardiness is seasonally and genetically variable and is subject to cultural practices (e.g., timing of pruning) (39). Based on these uncertainties, especially in winegrape tolerance to extreme temperature events, we developed a three-step screening process based on generalized *a priori* estimates of temperature thresholds and tolerances: (i) define the general thermal regime requirements; (ii) establish the criteria defining an extreme temperature event; and (iii) produce a range of categories of winegrape tolerance to extreme temperature events.

We based the general thermal regime requirement on three criteria. First, we calculated the growing season (see Table 1 for calendar definitions of all seasons) base 10°C growing-degree day summation and established the Winkler region (40, 41). Regions I (1,111–1,390 growing-degree days) and II (1,391–1,670 growing-degree days) generally produce the best dry table wines with light to medium body and good balance. Region III (1,671–1,950 growing-degree days) produces full-bodied dry and sweet wines. Region IV (1,951–2,220 growing-degree days) is best for fortified wines, with table wines being inferior. Region V (2,220–2,499 growing-degree days) is best for table grapes and

makes low-quality table wines. We rejected all pixels outside the full 1,111–2,499 growing-degree day Winkler region range. Second, based on a global survey of premium wine ratings (17), we eliminated all pixels with growing season average temperature <13°C or >20°C. Third, equitable (low) diurnal temperature ranges are associated with optimal ripening conditions for high-quality wines (42); therefore we eliminated pixels with diurnal temperature ranges >20°C during either the growing or ripening seasons.

Based on literature estimates, we assigned temperature thresholds to represent daily extreme temperature events. Growing season and ripening-season hot days, defined as days with maximum temperature >35°C, are related to the generalized upper limit for grapevine photosynthesis (42), lowest grapevine dry matter production,^{||} and inhibition of color development (43). Cold days, defined as days with minimum temperature below –12.2°C in winter and –6.7°C in spring/fall, are related to bud and wood loss (44) and grapevine fatality (40, 41).

Finally, we generated four categories designed to represent the geographic uncertainty in varietal tolerance: HTCT, HICT, HTCI, and HICI. Within each category, we defined low tolerance levels as 7 days and high tolerance levels as 14 days (see Table 1 for details).

Future Potential Distribution. For this study, we extended the 25-km-resolution climate simulations reported by Diffenbaugh *et al.* (9). Two 29-year simulations were completed for the conterminous United States by using the Abdus Salam Institute for Theoretical Physics regional climate model (RegCM3) (45–47): one reference integration (RF) for the late 20th-century climate conditions (1961–1989) and one (A2) for future climate conditions (2071–2099) under the Intergovernmental Panel on Climate Change Special Report on Emission Scenarios A2 GHG emission scenario (48). RegCM3 was forced at the lateral boundaries by fields from global time-slice simulations carried out with the National Aeronautics and Space Administration finite volume element model [see Coppola and Giorgi (49) for a detailed description of the global climate model experiments]. The first year of each integration was run twice to allow the RegCM3 to equilibrate, and the initial iteration was discarded from the analysis.

To correct systematic model biases and capture the spatial heterogeneity reflected in the observational climate data, we have used an anomaly (or Δ) technique to create the future climate inputs for the winegrape production calculations. For the RegCM3 RF and A2 climate model simulations, we first calculated the climate metrics of growing season degree day summations, growing season average temperatures, number of hot days in the growing and ripening seasons, number of cold days in spring/fall and winter, and growing and ripening season diurnal temperature ranges. We then calculated RegCM3-simulated differences (A2 minus RF) in the climate metrics, reprojected those data from the RegCM3 25-km grid to the Daymet 1-km grid (ENVI 4.0), and added the difference values to the Daymet climate metrics, thus creating a Δ Daymet data set of 1-km climate metrics. We then calculated, for each pixel, 24 annual Δ Daymet values to determine whether or not pixels were valid winegrape-producing regions.

Analysis. We conducted a five-step analysis. First, for HTCT, HICT, HTCI, and HICI categories in both the Daymet and Δ Daymet climates, we visualized the winegrape production suitability of each pixel as a 0- to 24-year scale, with 0 being no potential for winegrape production and 24 being production suitability in every year. Second, we calculated the total area in

^{||}Buttrose, M. (1974) *CAB Horticultural Abstracts* 44, 319–326.

Winkler regions I–V in the Daymet and Δ Daymet climates based on three criteria: (i) 24-year mean growing season growing-degree summations to calculate Winkler regions alone, i.e., no consideration of extreme temperatures; (ii) multivariate screening factors, but including pixels with at least one valid winegrape production year, i.e., including marginal production regions; and (iii) multivariate screening factors but using a 24-year mean climatology, not individual years. For criteria ii and iii we used the average distribution from the HTCT, HICT, HTCI, and HICI categories. Third, to understand the underlying climatic conditions leading to changes in winegrape production distribution, we calculated and visualized the A2 minus RF differences in the climate metrics. Fourth, to isolate the effects of changes in specific metrics, we re-executed the winegrape suitability assessment by using the eight separate screening factors,

the mean climate metrics (most representative of long-term winegrape production suitability), and the HTCT screening levels (results similar for HICT, HTCI, and HICI categories not presented). Finally, based on results from step four and as described, we tested the impact of shifts in the timing of the seasons (50) containing the most critical temperature metric.

M.A.W. was supported by the National Aeronautics and Space Administration New Investigator Program. The climate model simulations were generated by using computational resources in the Rosen Center for Advanced Computing at Purdue University. Generation of the RF simulation was partially supported by National Science Foundation Grant 0315677. The initiation of this project was facilitated by the 2005 University Corporation for Atmospheric Research/National Center for Atmospheric Research Junior Faculty Forum on Future Scientific Directions.

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EPA-666

Ben DeAngelo

04/06/2010 04:56 PM

To

cc

bcc

Subject UPGRADE C:\Documents and Settings\owner\My Documents\Endangerment\Response to Public Comments\RTC AQ 9-03 BJD.doc

(b)(5) Deliberative

- RTC AQ 9-03 BJD.doc

EPA-EF-000908

EPA-667

Doug Grano

03/24/2010 11:34 AM

To

cc

bcc

Subject UPLoad C:\Documents and Settings\dgrano\My Documents\WP\Climate\Rulemaking\Endangerment\Comment-response\RTC AQ 9-03 BJD.doc

(b)(5) Deliberative

- RTC AQ 9-03 BJD.doc

EPA-EF-000909

EPA-668

Ben DeAngelo/DC/USEPA/US

To Lesley Jantarasami

09/16/2009 05:09 PM

cc

bcc

Subject Fw: Continued discussion on response to public comments
re: TSD AQ

Lesley, here are draft responses on the AQ sections. I think these are in good shape for our compilation by Friday. Can I hand this over to you for formatting and uploading into Quickr??

Thanks!!

-Ben

----- Forwarded by Ben DeAngelo/DC/USEPA/US on 09/16/2009 05:07 PM -----

From: Ben DeAngelo/DC/USEPA/US
To: Darrell Winner/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Bryan Bloomer/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, John Dawson/DC/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 09/16/2009 05:07 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Darrell and co.,

Have finally gone through the responses and these appear to be in good shape. I've made some suggested edits and noted some comments but for the most part relatively minor items.

(b)(5) Deliberative

Would you and Doug be able to provide a TSD update by Friday as well; any additional changes since the ones you forwarded?

Thanks!!!!

-Ben

(b)(5) Deliberative

RTC AQ 9-03 BJD.doc

Darrell Winner

Thanks to the hard work of Doug Grano...

09/03/2009 06:30:23 PM

From: Darrell Winner/DC/USEPA/US
To: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris

EPA-EF-000910

Weaver/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA, John Dawson/DC/USEPA/US@EPA, Bryan Bloomer/DC/USEPA/US@EPA

Date: 09/03/2009 06:30 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Thanks to the hard work of Doug Grano, John Dawson, and Bryan Bloomer, we now have a complete draft of responses. Please review and edit these as soon as possible:

[attachment "RTC AQ 9-03.doc" deleted by Ben DeAngelo/DC/USEPA/US]

We also have two short sections to insert into the TSD. Your review here is especially important-

[attachment "Revisions to AQ section of TSD 0903.doc" deleted by Ben DeAngelo/DC/USEPA/US]

Please send your comments to me and Doug, by COB Wed if possible. We will coordinate on changes to the draft and schedule a phone conference if it appears necessary from the comments.

-darrell

Darrell Winner, Ph.D.
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(Woodies Building / metro stop: Metro Center)

Darrell Winner We now plan to have a draft response f... 08/27/2009 02:21:30 PM

From: Darrell Winner/DC/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/27/2009 02:21 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

We now plan to have a draft response for all the comments to the group before the end of next week. Please reserve some time either right before or after the labor day weekend to review and edit these responses.

-darrell

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Darrell Winner

(b)(5) deliberative

08/25/2009 04:04:13 PM

From: Darrell Winner/DC/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/25/2009 04:04 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

(b)(5) Deliberative

-darrell

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Ben DeAngelo Quick clarification.. (b)(5) Deliberative 08/24/2009 06:15:28 PM

From: Ben DeAngelo/DC/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/24/2009 06:15 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Quick clarification.. (b)(5) Deliberative
[Redacted]

Also discussed with Doug that I'd like to (b)(5) Deliberative
[Redacted]

Ben DeAngelo Thanks all for these responses. I think... 08/24/2009 03:44:41 PM

From: Ben DeAngelo/DC/USEPA/US
To: Chris Weaver/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/24/2009 03:44 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Thanks all for these responses. I think (b)(5) Deliberative

Primarily for Darrell and Doug,

Are you satisfied with this draft for now?

Are there other (b)(5) Deliberative
[Redacted]

(b)(5) Deliberative



I think by the end of this week I want to have a good sense of what our responses are to all major comments, and see if over the next two weeks major progress to updating the TSD can also be made.

Thanks!!

-Ben

Chris Weaver Thanks, Doug. A couple quick commen... 08/19/2009 05:22:56 PM

From: Chris Weaver/DC/USEPA/US
To: Doug Grano/RTP/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/19/2009 05:22 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Thanks, Doug. A couple quick comments from me ...
-Chris

[attachment "Endangerment Proposal RTC AQ responses 8 19b weaver comments.doc" deleted by Darrell Winner/DC/USEPA/US]

Christopher P. Weaver, Ph.D.
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Washington, DC 20460

Doug Grano Here is a revised version based on com... 08/19/2009 12:11:15 PM

From: Doug Grano/RTP/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Larry

Wallace/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA

Date: 08/19/2009 12:11 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Here is a revised version based on comments today from Pat and Erika/Beth.
--Doug

[attachment "Endangerment Proposal RTC AQ responses 8 19b.doc" deleted by Chris Weaver/DC/USEPA/US]

All--
I've accepted the changes from the 8-13 document and made a few new changes. The changes focus
(b)(5) Deliberative

--Doug

Sara Terry I've made some comments (b)(5) Deliberative 08/13/2009 12:40:00 PM

From: Sara Terry/RTP/USEPA/US
To: Doug Grano/RTP/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA
Date: 08/13/2009 12:40 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

I've made some comments (b)(5) Deliberative Here is our revision so far.
(b)(5) Deliberative

[attachment "Endangerment Proposal RTC AQ responses 8 13.doc" deleted by Doug Grano/RTP/USEPA/US]

Thanks,
Sara

Doug Grano Here's a start. Please review and send... 08/10/2009 05:09:01 PM

From: Doug Grano/RTP/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/10/2009 05:09 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Here's a start. Please review and send additions and edits.
--Doug

[attachment "AQ responses dg8-10.doc" deleted by Sara Terry/RTP/USEPA/US]

EPA-669

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc

Subject UPGOAD F:\Endangerment\02_Comments and Responses\01_Sections\2.1.2 Uncertainty_JS + LCJ 091709.doc

(b)(5) Deliberative

- 2.1.2 Uncertainty_JS + LCJ 091709.doc

EPA-EF-000917

EPA-670

Ben DeAngelo

04/06/2010 04:56 PM

To

cc

bcc

Subject UPGOAD C:\Documents and Settings\owner\My Documents\Endangerment\Response to Public Comments\Forestry comment summary 9_16a_09 merge.doc

(b)(5) Deliberative

- Forestry comment summary 9_16a_09 merge.doc

EPA-EF-000918

EPA-671

**Jeremy
Martinich/DC/USEPA/US**
09/16/2009 05:22 PM

To Lesley Jantarasami
cc
bcc

Subject Re: need help to finish by Friday?

Hey Hey,

Here are a couple of sections for your expert review. Thanks for offering to do this...

(b)(5) Deliberative

(b)(5) Deliberative

Section 2.5.6 Coastal Areas.doc Section 2.5.8 Ecosystems and Wildlife.doc

Jeremy

Jeremy Martinich
USEPA, Climate Change Division
202-343-9871

Lesley Jantarasami Hey guys, If it would be helpful to y... 09/15/2009 05:12:32 PM

From: Lesley Jantarasami/DC/USEPA/US
To: Jeremy Martinich/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Jason Samenow/DC/USEPA/US@EPA, David Chalmers/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US, William Perkins/DC/USEPA/US@EPA
Date: 09/15/2009 05:12 PM
Subject: need help to finish by Friday?

Hey guys,

If it would be helpful to you, feel free to send me any of your drafts for general review / copyediting / formatting before they "go live" on Quickr. Consider me your one-woman support team :)

Happy writing!

Lesley

EPA-672

Marcus Sarofim

To

cc

bcc

Subject UPGRADE C:\Documents and Settings\msarofim\My Documents\WorkFolder\Tsd_Anpr\ResponseToComments\ResponseChapters\2.2.1 Greenhouse Gas Emissions and Concentrations.doc

(b)(5) Deliberative

- 2.2.1 Greenhouse Gas Emissions and Concentrations.doc

EPA-673

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc

Subject UPGRADE F:\Endangerment\02_Comments and Responses\01_Sections\2.4.7 Cryosphere_JS + LCJ 091709.doc

(b)(5) Deliberative

- 2.4.7 Cryosphere_JS + LCJ 091709.doc

EPA-EF-000921

EPA-674

Ben DeAngelo

04/06/2010 04:56 PM

To

cc

bcc

Subject UPLoad C:\Documents and Settings\owner\My Documents\Endangerment\Response to Public Comments\4.1.2.9.1 - Black Carbon.doc

(b)(5) Deliberative

- 4.1.2.9.1 - Black Carbon.doc

EPA-EF-000922

EPA-675

Michael Kolian
05/12/2010 10:09 AM

To
cc
bcc

Subject UPGOAD C:\Documents and Settings\Owner\My Documents\Ccd\TSD comment period\Forestry comment summary 9_17_09 merge.doc

(b)(5) Deliberative

- Forestry comment summary 9_17_09 merge.doc

EPA-676

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc

Subject UPLOADED F:\Endangerment\02_Comments and Responses\01_Sections\2.1.7, DBC + LCJ 091609.doc

(b)(5) Deliberative

- 2.1.7, DBC + LCJ 091609.doc

EPA-677

Lesley
Jantarasami/DC/USEPA/US
09/17/2009 10:46 AM

To David Chalmers
cc
bcc

Subject Re: need help to finish by Friday?

Hi David,

These look good! I made some suggested edits and recommended adding some page number info. I figured I'd let you make whatever changes you want and then reload the updated version into Quickr. If I get some time after reviewing other people's stuff, I'll take a look at what you've already put on Quickr.

thanks!

Lesley

(b)(5) Deliberative

2.1.7, DBC + LCJ 091609.doc

David Chalmers Hi Lesley, If you have time, I'd apprec... 09/16/2009 02:04:27 PM

From: David Chalmers/DC/USEPA/US
To: Lesley Jantarasami/DC/USEPA/US@EPA
Date: 09/16/2009 02:04 PM
Subject: Re: need help to finish by Friday?

Hi Lesley,

If you have time, I'd appreciate any feedback you might have on the attached summaries/responses on
(b)(5) Deliberative

Any thoughts or suggestions are appreciated. The doc is already up on Quickr, so feel free to make edits directly from there if you'd like.

I'm sure you're slammed, but if you happen to have time to look at any of the other responses I've already loaded onto Quickr, they could doubtless benefit from revisions and polishing.

Many thanks,
David

[attachment "2.1.7, DBC, 091609.doc" deleted by Lesley Jantarasami/DC/USEPA/US]

Lesley Jantarasami Hey guys, If it would be helpful to y... 09/15/2009 05:12:32 PM

From: Lesley Jantarasami/DC/USEPA/US
To: Jeremy Martinich/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Jason Samenow/DC/USEPA/US@EPA, David Chalmers/DC/USEPA/US@EPA, Michael

EPA-EF-000925

Kolian/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US, William Perkins/DC/USEPA/US@EPA
Date: 09/15/2009 05:12 PM
Subject: need help to finish by Friday?

Hey guys,

If it would be helpful to you, feel free to send me any of your drafts for general review / copyediting / formatting before they "go live" on Quickr. Consider me your one-woman support team :)

Happy writing!

Lesley

EPA-678

Lesley
Jantarasami/DC/USEPA/US
09/17/2009 10:54 AM

To Jason Samenow
cc
bcc

Subject Re: need help to finish by Friday?

No problem. Also, just wanted to mention that you used the old category names and numbers...the new ones are on the RTC outline up on Quickr.

Thanks!

Lesley

Jason Samenow Thanks. Feel free to load'em up... Jasor 09/16/2009 06:09:36 PM

From: Jason Samenow/DC/USEPA/US
To: Lesley Jantarasami/DC/USEPA/US@EPA
Date: 09/16/2009 06:09 PM
Subject: Re: need help to finish by Friday?

Thanks. Feel free to load'em up...

Jason

Lesley Jantarasami Looking good, I only had minor cha... 09/16/2009 05:53:38 PM

From: Lesley Jantarasami/DC/USEPA/US
To: Jason Samenow/DC/USEPA/US@EPA
Date: 09/16/2009 05:53 PM
Subject: Re: need help to finish by Friday?

Looking good, I only had minor changes so shall I go ahead and post them to Quickr for you, or would you like to look at them one last time?

Lesley

Jason Samenow Here are a few...though they don't yet... 09/15/2009 06:16:08 PM

From: Jason Samenow/DC/USEPA/US
To: Lesley Jantarasami/DC/USEPA/US@EPA
Date: 09/15/2009 06:16 PM
Subject: Re: need help to finish by Friday?

Here are a few...though they don't yet have full references/citations. That will have to come later.

The rest are works in progress...

Thanks for your help.

Jason

[attachment "11-6-USP-samenow.doc" deleted by Lesley Jantarasami/DC/USEPA/US] [attachment

EPA-EF-000927

"4-3-uncertainty-samenow.doc" deleted by Lesley Jantarasami/DC/USEPA/US] [attachment
"9-5-6-cryosphere-samenow.doc" deleted by Lesley Jantarasami/DC/USEPA/US]

Lesley Jantarasami Hey guys, If it would be helpful to y... 09/15/2009 05:12:32 PM

From: Lesley Jantarasami/DC/USEPA/US
To: Jeremy Martinich/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Jason Samenow/DC/USEPA/US@EPA, David Chalmers/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US, William Perkins/DC/USEPA/US@EPA
Date: 09/15/2009 05:12 PM
Subject: need help to finish by Friday?

Hey guys,

If it would be helpful to you, feel free to send me any of your drafts for general review / copyediting / formatting before they "go live" on Quickr. Consider me your one-woman support team :)

Happy writing!

Lesley

EPA-679

William Perkins/DC/USEPA/US
09/17/2009 10:59 AM

To Marcus Sarofim, Jeremy Martinich, David Chalmers
cc
bcc
Subject New comment added in your category

Marcus, Jeremy, and David,

The last significant comment we received was a few days ago from Holland and Hart -- they submitted a hard copy of Heaven and Earth by Plimer (which David has at his desk) and a couple pages of statements with citations from the book. ERG parsed those citations (from comment 11454.1) into the following categories:

(b)(5) Deliberative

[Redacted]

I wanted to make sure that you guys saw this as I know that some of these categories have already been moved off the web interface. Thank you.

Cheers,

Bill



EPA-HQ-OAR-2009-0171-11454.1.pdf

available at
regulations.gov

Bill Perkins
Climate Change Adaptation Analyst
Climate Science and Impacts Branch
Climate Change Division
U.S. Environmental Protection Agency
perkins.william@epa.gov
(O) 202.343.9460
(F) 202.343.2202
(C) (b)(6)

EPA-EF-000929

EPA-680

Marcus Sarofim

To

cc

bcc

Subject UPGRADE C:\Documents and Settings\msarofim\My Documents\WorkFolder\Tsd_Anpr\ResponseToComments\ResponseChapters\4.1.2.3 -- Carbon Dioxide.doc

(b)(5) Deliberative

- 4.1.2.3 -- Carbon Dioxide.doc

EPA-EF-000930

EPA-681

Marcus Sarofim

To

cc

bcc

Subject UPGRADE C:\Documents and Settings\msarofim\My Documents\WorkFolder\Tsd_Anpr\ResponseToComments\ResponseChapters\4.1.2.4 -- Methane.doc

(b)(5) Deliberative

- 4.1.2.4 -- Methane.doc

EPA-682

Lesley Jantarasami/DC/USEPA/US
09/17/2009 11:32 AM

To Ben DeAngelo
cc
bcc

Subject Re: Fw: Continued discussion on response to public comments re: TSD AQ

Hey Ben,

Just realized I need to know the section numbers for all these comments to be able to load them in Quickr. Can you go through and label where they are supposed to fall within the outline, or can we go through it together (b)(5) Deliberative ?

Thanks,

Lesley

(b)(5) Deliberative

RTC AQ BJD + LCJ 091709.doc

Ben DeAngelo Yeah, think accepting those changes w... 09/16/2009 05:47:35 PM

From: Ben DeAngelo/DC/USEPA/US
To: Lesley Jantarasami/DC/USEPA/US@EPA
Date: 09/16/2009 05:47 PM
Subject: Re: Fw: Continued discussion on response to public comments re: TSD AQ

Yeah, think accepting those changes would be fine; most are straightforward and I don't expect ORD/OAQPS to not be ok with those changes. Thanks!

Lesley Jantarasami Sure thing! I am going to keep the... 09/16/2009 05:36:45 PM

From: Lesley Jantarasami/DC/USEPA/US
To: Ben DeAngelo/DC/USEPA/US
Date: 09/16/2009 05:36 PM
Subject: Re: Fw: Continued discussion on response to public comments re: TSD AQ

Sure thing! I am going to keep the comment bubbles, but would it be alright to accept your track changes?

Ben DeAngelo Lesley, here are draft responses on the... 09/16/2009 05:09:01 PM

From: Ben DeAngelo/DC/USEPA/US
To: Lesley Jantarasami/DC/USEPA/US@EPA
Date: 09/16/2009 05:09 PM
Subject: Fw: Continued discussion on response to public comments re: TSD AQ

Lesley, here are draft responses on the AQ sections. I think these are in good shape for our compilation by Friday. Can I hand this over to you for formatting and uploading into Quickr??

Thanks!!

EPA-EF-000932

-Ben

----- Forwarded by Ben DeAngelo/DC/USEPA/US on 09/16/2009 05:07 PM -----

From: Ben DeAngelo/DC/USEPA/US
To: Darrell Winner/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Bryan Bloomer/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, John Dawson/DC/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 09/16/2009 05:07 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Darrell and co.,

Have finally gone through the responses and these appear to be in good shape. I've made some suggested edits and noted some comments but for the most part relatively minor items.

(b)(5) Deliberative

Would you and Doug be able to provide a TSD update by Friday as well; any additional changes since the ones you forwarded?

Thanks!!!!

-Ben

[attachment "RTC AQ 9-03 BJD.doc" deleted by Lesley Jantarasami/DC/USEPA/US]

Darrell Winner Thanks to the hard work of Doug Grano... 09/03/2009 06:30:23 PM

From: Darrell Winner/DC/USEPA/US
To: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA, John Dawson/DC/USEPA/US@EPA, Bryan Bloomer/DC/USEPA/US@EPA
Date: 09/03/2009 06:30 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Thanks to the hard work of Doug Grano, John Dawson, and Bryan Bloomer, we now have a complete draft of responses. Please review and edit these as soon as possible:

[attachment "RTC AQ 9-03.doc" deleted by Ben DeAngelo/DC/USEPA/US]

(b)(5) Deliberative

EPA-EF-000933

[attachment "Revisions to AQ section of TSD 0903.doc" deleted by Ben DeAngelo/DC/USEPA/US]

Please send your comments to me and Doug, by COB Wed if possible. We will coordinate on changes to the draft and schedule a phone conference if it appears necessary from the comments.

-darrell

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USEPA/ORD/NCER/ESRD
Room 3111
1025 F St NW
Washington, DC 20004

(Woodies Building / metro stop: Metro Center)

Darrell Winner	We now plan to have a draft response f...	08/27/2009 02:21:30 PM
----------------	---	------------------------

From: Darrell Winner/DC/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/27/2009 02:21 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

We now plan to have a draft response for all the comments to the group before the end of next week. Please reserve some time either right before or after the labor day weekend to review and edit these responses.

-darrell

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1025 F St NW
Washington, DC 20004

(Woodies Building / metro stop: Metro Center)

Darrell Winner (b)(5) deliberative 08/25/2009 04:04:13 PM

From: Darrell Winner/DC/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/25/2009 04:04 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

(b)(5) Deliberative

-darrell

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Washington, DC 20004

(Woodies Building / metro stop: Metro Center)

Ben DeAngelo Quick clarification.. (b)(5) Deliberative 08/24/2009 06:15:28 PM

From: Ben DeAngelo/DC/USEPA/US

To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/24/2009 06:15 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Quick clarification.. (b)(5) Deliberative

Also discussed with Doug that I'd like to (b)(5) Deliberative

Ben DeAngelo Thanks all for these responses. I think... 08/24/2009 03:44:41 PM

From: Ben DeAngelo/DC/USEPA/US
To: Chris Weaver/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/24/2009 03:44 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Thanks all for these responses. I think this (b)(5) Deliberative

Primarily for Darrell and Doug,

Are you satisfied with this draft for now?

Are there other (b)(5) Deliberative

(b)(5) Deliberative

(b)(5) Deliberative

I think by the end of this week I want to have a good sense of what our responses are to all major comments, and see if over the next two weeks major progress to updating the TSD can also be made.

Thanks!!

-Ben

Chris Weaver Thanks, Doug. A couple quick commen... 08/19/2009 05:22:56 PM

From: Chris Weaver/DC/USEPA/US
To: Doug Grano/RTP/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/19/2009 05:22 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Thanks, Doug. A couple quick comments from me ...
-Chris

[attachment "Endangerment Proposal RTC AQ responses 8 19b weaver comments.doc" deleted by Darrell Winner/DC/USEPA/US]

Christopher P. Weaver, Ph.D.
Global Change Research Program

U.S. Environmental Protection Agency
Office of Research and Development
National Center for Environmental Assessment

Tel: +1 703 347 8621
Fax: +1 703 347 8694
Email: weaver.chris@epa.gov

Mailing address:
US EPA (8601-P)
1200 Pennsylvania Ave.
Washington, DC 20460

Doug Grano Here is a revised version based on com... 08/19/2009 12:11:15 PM

From: Doug Grano/RTP/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA
Date: 08/19/2009 12:11 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Here is a revised version based on comments today from Pat and Erika/Beth.
--Doug

[attachment "Endangerment Proposal RTC AQ responses 8 19b.doc" deleted by Chris Weaver/DC/USEPA/US]

All--

I've accepted the changes from the 8-13 document and made a few new changes. The changes focus
(b)(5) Deliberative

--Doug

Sara Terry I've made some comments and (b)(5) Deliberative 08/13/2009 12:40:00 PM

From: Sara Terry/RTP/USEPA/US
To: Doug Grano/RTP/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA
Date: 08/13/2009 12:40 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

I've made some comments and (b)(5) Deliberative Here is our revision so far.
(b)(5) Deliberative

[attachment "Endangerment Proposal RTC AQ responses 8 13.doc" deleted by Doug Grano/RTP/USEPA/US]

Thanks,
Sara

Doug Grano Here's a start. Please review and send... 08/10/2009 05:09:01 PM

From: Doug Grano/RTP/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/10/2009 05:09 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Here's a start. Please review and send additions and edits.
--Doug

[attachment "AQ responses dg8-10.doc" deleted by Sara Terry/RTP/USEPA/US]

EPA-683

Marcus Sarofim

To

cc

bcc

Subject UPLOAD C:\Documents and Settings\msarofim\My Documents\WorkFolder\Tsd_Anpr\ResponseToComments\ResponseChapters\4.1.2.5 -- Nitrous Oxide.doc

(b)(5) Deliberative

- 4.1.2.5 -- Nitrous Oxide.doc

EPA-EF-000939

EPA-684

Marcus Sarofim

To

cc

bcc

Subject UPGRADE C:\Documents and Settings\msarofim\My Documents\WorkFolder\Tsd_Anpr\ResponseToComments\ResponseChapters\4.1.2.6 Hydrofluorocarbons.doc

(b)(5) Deliberative

- 4.1.2.6 Hydrofluorocarbons.doc

EPA-685

Marcus Sarofim

To

cc

bcc

Subject UPGRADE C:\Documents and Settings\msarofim\My Documents\WorkFolder\Tsd_Anpr\ResponseToComments\ResponseChapters\2.4.1 Climate Models.doc

(b)(5) Deliberative

- 2.4.1 Climate Models.doc

EPA-EF-000941

EPA-686

Marcus Sarofim

To

cc

bcc

Subject UPGRADE C:\Documents and Settings\msarofim\My Documents\WorkFolder\Tsd_Anpr\ResponseToComments\ResponseChapters\2.3.1 -- Degree of Anthropogenic Climate Influence.doc

(b)(5) Deliberative

- 2.3.1 -- Degree of Anthropogenic Climate Influence.doc

EPA-687

Michael Kolian
05/12/2010 10:09 AM

To
cc
bcc

Subject UPLoad C:\Documents and Settings\Owner\My
Documents\Ccd\TSD comment period\Forestry comment
summary 9_16a_09 merge.doc

(b)(5) Deliberative

- Forestry comment summary 9_16a_09 merge.doc

EPA-688

Lesley
Jantarasami/DC/USEPA/US
09/17/2009 01:28 PM

To Ben DeAngelo
cc Rona Birnbaum
bcc

Subject your feedback on example responses

Hi Ben,

Rona and I took a closer look at the example responses that were sent over the OGC and (b)(5) Deliberative

[REDACTED] Could you take a look at the attached and let us know if you agree with the suggested edits?

Thanks so much,

Lesley

(b)(5) Deliberative

Example from 2.1.2 Uncertainty.doc

Lesley Jantarasami
US EPA, Climate Change Division
Climate Science & Impacts Branch
202.343.9929
202.343.2202 (fax)
Jantarasami.Lesley@epa.gov

EPA-EF-000944

EPA-689

Doug Grano

03/24/2010 11:34 AM

To

cc

bcc

Subject UPGLOAD C:\Documents and Settings\dgrano\My Documents\WP\Climate\Rulemaking\Endangerment\Comment-response\RTC AQ 9-16.doc

(b)(5) Deliberative

- RTC AQ 9-16.doc

EPA-EF-000945

EPA-690

Doug Grano/RTP/USEPA/US

09/17/2009 04:17 PM

To Ben DeAngelo

cc Anne Grambsch, Bryan Bloomer, Bryan Hubbell, Carey Jang, Chris Weaver, Darrell Winner, Erika Sasser, John Dawson, Larry Wallace, Marcus Sarofim, Michael Kolian, Pat Dolwick, Phil Lorang, Rona Birnbaum, Sara Terry, Dale Evarts

bcc

Subject Re: Continued discussion on response to public comments re: TSD AQ

Ben--

I've gone through all the edits and have attached a clean draft for you to add to the other responses.

--Doug

(b)(5) Deliberative

RTC AQ 9-17.doc

Ben DeAngelo

Darrell and co., Have finally gone throu...

09/16/2009 05:07:04 PM

From: Ben DeAngelo/DC/USEPA/US
To: Darrell Winner/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Bryan Bloomer/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, John Dawson/DC/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
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[attachment "RTC AQ 9-03 BJD.doc" deleted by Doug Grano/RTP/USEPA/US]

Darrell Winner

Thanks to the hard work of Doug Grano...

09/03/2009 06:30:23 PM

From: Darrell Winner/DC/USEPA/US
To: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Bryan

EPA-EF-000946

Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA, John Dawson/DC/USEPA/US@EPA, Bryan Bloomer/DC/USEPA/US@EPA

Date: 09/03/2009 06:30 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

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[attachment "RTC AQ 9-03.doc" deleted by Ben DeAngelo/DC/USEPA/US]

(b)(5) Deliberative

[attachment "Revisions to AQ section of TSD 0903.doc" deleted by Ben DeAngelo/DC/USEPA/US]

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-darrell

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Washington, DC 20004

(Woodies Building / metro stop: Metro Center)

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From: Darrell Winner/DC/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/27/2009 02:21 PM

Subject: Re: Continued discussion on response to public comments re: TSD AQ

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-darrell

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USEPA/ORD/NCER/ESRD
Room 3104
1025 F St NW
Washington, DC 20004

(Woodies Building / metro stop: Metro Center)

Darrell Winner

(b)(5) Deliberative

08/25/2009 04:04:13 PM

From: Darrell Winner/DC/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/25/2009 04:04 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

(b)(5) Deliberative

-darrell

Darrell Winner, Ph.D.
Director, Applied Science Division
National Center for Environmental Research
winner.darrell@epa.gov
phone 202-343-9748
fax 202-233-0677

EPA-EF-000948

Regular mail:
USEPA/ORD/NCER/ESRD (8726F)
1200 Pennsylvania Ave NW
Washington, DC 20460-0001

FedEx/Courier:
USEPA/ORD/NCER/ESRD
Room 3104
1025 F St NW
Washington, DC 20004

(Woodies Building / metro stop: Metro Center)

Ben DeAngelo Quick clarification.. (b)(5) Deliberative 08/24/2009 06:15:28 PM

From: Ben DeAngelo/DC/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/24/2009 06:15 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Quick clarification.. (b)(5) Deliberative

Also discussed with Doug that I'd like to (b)(5) Deliberative

Ben DeAngelo Thanks all for these responses. I think... 08/24/2009 03:44:41 PM

From: Ben DeAngelo/DC/USEPA/US
To: Chris Weaver/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Doug Grano/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/24/2009 03:44 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Thanks all for these responses. I think (b)(5) Deliberative

Primarily for Darrell and Doug,

Are you satisfied with this draft for now?

Are there other (b)(5) Deliberative

(b)(5) Deliberative

(b)(5) Deliberative

I think by the end of this week I want to have a good sense of what our responses are to all major comments, and see if over the next two weeks major progress to updating the TSD can also be made.

Thanks!!

-Ben

Chris Weaver Thanks, Doug. A couple quick commen... 08/19/2009 05:22:56 PM

From: Chris Weaver/DC/USEPA/US
To: Doug Grano/RTP/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/19/2009 05:22 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Thanks, Doug. A couple quick comments from me ...
-Chris

[attachment "Endangerment Proposal RTC AQ responses 8 19b weaver comments.doc" deleted by Darrell Winner/DC/USEPA/US]

Christopher P. Weaver, Ph.D.
Global Change Research Program
U.S. Environmental Protection Agency
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National Center for Environmental Assessment
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Email: weaver.chris@epa.gov

Mailing address:
US EPA (8601-P)
1200 Pennsylvania Ave.
Washington, DC 20460

Doug Grano Here is a revised version based on com... 08/19/2009 12:11:15 PM

From: Doug Grano/RTP/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Darrell

Winner/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA

Date: 08/19/2009 12:11 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Here is a revised version based on comments today from Pat and Erika/Beth.
--Doug

[attachment "Endangerment Proposal RTC AQ responses 8 19b.doc" deleted by Chris Weaver/DC/USEPA/US]

All--
I've accepted the changes from the 8-13 document and made a few new changes. The changes focus
(b)(5) Deliberative

--Doug

Sara Terry I've made some comments and (b)(5) Deliberative 08/13/2009 12:40:00 PM

From: Sara Terry/RTP/USEPA/US
To: Doug Grano/RTP/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA
Date: 08/13/2009 12:40 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

I've made some comments and (b)(5) Deliberative Here is our revision so far.
(b)(5) Deliberative

[attachment "Endangerment Proposal RTC AQ responses 8 13.doc" deleted by Doug Grano/RTP/USEPA/US]

Thanks,
Sara

Doug Grano Here's a start. Please review and send... 08/10/2009 05:09:01 PM

From: Doug Grano/RTP/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA
Date: 08/10/2009 05:09 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Here's a start. Please review and send additions and edits.

--Doug

[attachment "AQ responses dg8-10.doc" deleted by Sara Terry/RTP/USEPA/US]

EPA-691

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc

Subject UPLOADED:\Endangerment\02_Comments and Responses\01_Sections\RTC AQ BJD + LCJ 091709.doc

(b)(5) Deliberative

[REDACTED] - RTC AQ BJD + LCJ 091709.doc

EPA-692

Michael Kolian/DC/USEPA/US To David Chalmers
09/17/2009 04:55 PM cc Jason Samenow, Lesley Jantarasami
bcc
Subject Re: human health comments

Yeah, both are captured under human health.
Thanks for double checking.

David Chalmers I believe Mike already transferred thes... 09/17/2009 04:30:25 PM

From: David Chalmers/DC/USEPA/US
To: Lesley Jantarasami/DC/USEPA/US@EPA
Cc: Jason Samenow/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA
Date: 09/17/2009 04:30 PM
Subject: Re: human health comments

I believe Mike already transferred these over to the health section but I'll double-check.

Cheers,

David Chalmers
ORISE Fellow
U.S. EPA, Climate Change Division
202.343.9814

Lesley Jantarasami Hey guys - wanted to make sure yo... 09/17/2009 04:17:07 PM

From: Lesley Jantarasami/DC/USEPA/US
To: Jason Samenow/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA
Cc: David Chalmers/DC/USEPA/US@EPA
Date: 09/17/2009 04:17 PM
Subject: human health comments

Hey guys - wanted to make sure you were aware of these two human health comments (b)(5) Deliberative

Thanks! Lesley

(b)(5) Deliberative

Commenter Name: Attorneys General of the Commonwealth of Massachusetts and the States of Arizona, California, Connecticut, Illinois, Iowa, Maine, Maryland, New Jersey, New Mexico, New York, Oregon, Rhode Island, Washington, and New York City

Commenter Affiliation: Commonwealth of Massachusetts and the States of Arizona, California, Connecticut, Illinois, Iowa, Maine, Maryland, New Jersey, New Mexico, New York, Oregon, Rhode Island, Washington, and New York City

Commenter Type:

Document Control Number: EPA-HQ-OAR-2009-0171-3502.1

Comment Excerpt Number: 1

Form Letter? No

EPA-EF-000954

Late Comment? No

Comment Changed? No

[View Original Comment Letter](#)

In addition, as EPA notes, more frequent occurrences of unusually hot days and nights and heat waves as a result of global warming will likely result in harm to public health, especially in urban areas. See 74 Fed. Reg. at 18901; TSD at 69-71 (discussing expected adverse effects in Los Angeles and Chicago). As further evidence, scientists working for New York State recently completed a study examining respiratory and cardiovascular illnesses (morbidity) in New York City attributable to exposure to extreme heat. The resulting paper by Lin, et al., entitled "Extreme High Temperatures and Hospital Admissions for Respiratory and Cardiovascular Diseases" (attached hereto), has been accepted for publication in the Journal of Epidemiology this July. This study found that for each degree increase in temperature above a threshold (28.9 oC), there was a significant increase in hospitalizations due to respiratory diseases on the same day (immediate effects). Similarly, for each degree increase above a threshold (29.4 oC), there was a significant increase several days after exposure in hospitalizations due to cardiovascular diseases (likely due to the fact that it can take several days for cardiovascular effects to manifest). The diseases most associated with rises in temperature were: asthma, chronic pulmonary obstructive disease, ischemic heart disease (heart attacks) and abnormal heart rhythms. For respiratory diseases, the increased risks for Hispanics were higher compared with non-Hispanics, and people living in low income neighborhoods were at higher risk compared with those in high income neighborhoods. Elderly people also had higher increased hospitalization risks for both disease types. Based on the results of the Lin, et al. study, it is reasonable to conclude that the number of hospitalizations can be expected to significantly increase in the future due to a warming climate. Thus, the results of this study further confirm EPA's conclusion that greenhouse gas emissions endanger public health.

Commenter Name: DR. EVAN KANTER

Commenter Affiliation: PHYSICIANS FOR SOCIAL RESPONSIBILITY

Commenter Type:

Document Control Number: EPA-HQ-OAR-2009-0171-2895_NNN

Comment Excerpt Number: 1

Form Letter? No

Late Comment? No

Comment Changed? No

[View Original Comment Letter](#)

The World Health Organization estimates that global warming is already responsible for 150,000 deaths and 5 million illnesses each year. These have come in the form of malnutrition, diarrhea and vector-borne diseases like malaria and dengue fever. So far they have occurred predominantly in poor countries. Ironically, those that contribute the least to global warming are the most susceptible. The health impact of climate change is also evident here in the developed world and will be increasingly felt if we do not take action. There are four main categories of health effects. First, increased frequency and intensity of heat waves. The associated health problems of heat cramps, heat exhaustion, and heat stroke will be become increasingly common. The very old and very young are especially vulnerable, as well as those who are poor, socially isolated or who have chronic illnesses. Second, increased air pollution. Increased temperatures cause increased production of ground level ozone, the main component of smog. This will increase rates of asthma and other respiratory diseases. It also makes breathing difficult for those who already have cardiac or respiratory ailments. Pollen production and allergies are also increasing as a result of increased carbon dioxide concentrations. Third, infectious diseases. Climate change is altering the range of disease-carrying organisms. West Nile virus carried by mosquitos was not seen in the U.S. until recently. More than 25,000 cases and more than 1,000 deaths have been recorded. Fourth, extreme weather events. This includes severe storms, increases in both drought and flooding, and associated features such as erosion and wild fires. We simply do not have

the public health capacity to respond to increasing numbers of large scale disasters that are difficult to predict.

EPA-693

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc

Subject UPGRADE F:\Endangerment\02_Comments and Responses\01_Sections\2.5.8 Ecosystems and Wildlife_JM + LCJ.doc

(b)(5) Deliberative

- 2.5.8 Ecosystems and Wildlife_JM + LCJ.doc

EPA-694

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc

Subject UPGRADE F:\Endangerment\02_Comments and Responses\01_Sections\2.5.6 Coastal Areas_JM + LCJ.doc

(b)(5) Deliberative

- 2.5.6 Coastal Areas_JM + LCJ.doc

EPA-695

Lesley Jantarasami/DC/USEPA/US
09/17/2009 05:10 PM

To Jeremy Martinich
cc
bcc

Subject Re: need help to finish by Friday?

Hey there,

I've finished a general review of your sections - let me know if you have any questions!

Thanks,

Lesley

(b)(5) Deliberative

(b)(5) Deliberative

2.5.6 Coastal Areas_JM + LCJ.doc 2.5.8 Ecosystems and Wildlife_JM + LCJ.doc

Jeremy Martinich Hey Hey, Here are a couple of sectio... 09/16/2009 05:22:37 PM

From: Jeremy Martinich/DC/USEPA/US
To: Lesley Jantarasami/DC/USEPA/US@EPA
Date: 09/16/2009 05:22 PM
Subject: Re: need help to finish by Friday?

Hey Hey,

Here are a couple of sections for your expert review. Thanks for offering to do this...
[attachment "Section 2.5.6 Coastal Areas.doc" deleted by Lesley Jantarasami/DC/USEPA/US]
[attachment "Section 2.5.8 Ecosystems and Wildlife.doc" deleted by Lesley Jantarasami/DC/USEPA/US]

Jeremy

Jeremy Martinich
USEPA, Climate Change Division
202-343-9871

Lesley Jantarasami Hey guys, If it would be helpful to y... 09/15/2009 05:12:32 PM

From: Lesley Jantarasami/DC/USEPA/US
To: Jeremy Martinich/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Jason Samenow/DC/USEPA/US@EPA, David Chalmers/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US, William Perkins/DC/USEPA/US@EPA
Date: 09/15/2009 05:12 PM
Subject: need help to finish by Friday?

Hey guys,

If it would be helpful to you, feel free to send me any of your drafts for general review / copyediting / formatting before they "go live" on Quickr. Consider me your one-woman support team :)

EPA-EF-000959

Happy writing!

Lesley

EPA-696

David
Chalmers/DC/USEPA/US

09/17/2009 05:12 PM

To Jeremy Martinich

cc

bcc

Subject new ecosystem comment

(b)(5) Deliberative

Commenter Name: Doug Heiken
 Commenter Affiliation: Oregon Wild
 Commenter Type:
 Document Control Number: EPA-HQ-OAR-2009-0171-3396
 Comment Excerpt Number: 3
 Form Letter? No
 Late Comment? No
 Comment Changed? No
[View Original Comment Letter](#)

Examples of new and additional stresses caused by CO2 enrichment and climate change that should be included in the endangerment finding include: -Plant species have different responses to CO2 enrichment which will likely lead to change in changes in community composition. -Isoclimes will shift north and toward higher elevations. Species will have different capacities to migrate with the shifting isoclimes which will lead to changes in community composition and species abundance and habitat bottlenecks. -Biomes will need to move with the shifting isoclimes, but biotic communities will not move as intact units. They will disassemble and reassemble in novel ways. The biotic community's passage through this process is very likely to lead to significant changes in community composition and relative abundance of species. Some species may drop out of the mix and become extirpated leading to a loss of species viability and a loss of ecosystem function. -The ranges of many species will be reduced as shifting isoclimes encounter barriers to migration such as human development, altered and fragmented landscapes, geographic barriers, and shrinking land masses (e.g. mountains that get smaller with elevation). -Many types of disturbance are expected to increase, including flood and mass movement of soil, fire, wind, insects and disease. Increased wind may be a significant driver of fire disturbance and the spread of weeds. [See URL reference: http://www.ucsc.edu/news_events/text.asp?pid=2644 and http://www.ucsc.edu/news_events/img/2008/12/sept_wind_diff.jpg] -More precipitation is expected to fall as rain instead of snow, snow is expected to melt earlier in the spring, evaporation and transpiration are expected to increase with temperature, so water shortage will adversely affect fish and many other species. F. Richard Hauer, Jill S. Baron, Donald H. Campbell, Kurt D. Fausch, Steve W. Hostetler, George H. Leavesley, Peter R. Leavitt, Diane M. Mcknight, Jack A. Stanford. Assessment Of Climate Change And Freshwater Ecosystems Of The Rocky Mountains, USA And Canada. Hydrological Processes. Volume 11, Issue 8 , Pages 903 – 924. Some species like the northern spottedowl are very sensitive to inclement weather during the spring breeding season. A series of wet springs caused by climate change could lead to population decline in threatened & endangered species. Franklin AB, Anderson DR, Gutierrez RJ, Burnham KP (2000) Climate, habitat quality, and \tness in northern spotted owl populations in northwestern California. Ecol Monogr 70: 539–590. If precipitation events become more intense, it could cause scouring of egg masses, which will further imperil threatened & endangered slamon in the Pacific Northwest. -Trees will be stressed by insects and disease because mild winters are expected to increase the ability of insect pests to overwinter. Longer growing seasons are expected to allow insect pests to readily reproduce. CO2 enrichment could also increase the amount of host material for pest species leading to larger and longer outbreaks of damaging insects. Insect populations could become decoupled from predator populations. -Humans will react to climate change in some ways that may compound impacts to species. Examples of potentially troubling human reactions include dams or other waterworks to store water and control floods, fire suppression that results in uncharacteristic fuel build-up and large future fires, increased or intensified use of land to grow biomass fuel thus

EPA-EF-000961

interfering with the global biological carbon cycle. -Disturbance and shifting isoclines and human disturbance and vectors will invite increased invasive species that will compete with, prey upon, parasitize, infect, or modify the habitat of native species. -Climate change will alter the synchrony between plants and pollinators, and between animals and plant foods, between predators and prey. The timing of migration events will also be altered which will have repercussions for species that migrate and the species who rely on them. -Mild winters may inhibit the ability of some plants and animals to remain dormant during winter making them more vulnerable to cold snaps. -CO₂ fertilization may decrease the nutritional value of plants eaten by animals. -Long hot summers and drought will lead to heat stress in plants and animals. -All the above influences will increase the interannual variability of wildlife populations which can increase the stochastic vulnerability of populations. Christopher C. Wilmers, Eric Post, and Alan Hastings. A Perfect Storm: The Combined Effects on Population Fluctuations of Autocorrelated Environmental Noise, Age Structure, and Density Dependence. *Am. Nat.* 2007. Vol. 169, pp. 673-683. -There are cascading effects of all the above that will further compound the adverse impacts of climate change and human disturbance.

David Chalmers
ORISE Fellow
U.S. EPA, Climate Change Division
202.343.9814

EPA-697

Michael Kolian/DC/USEPA/US To Lesley Jantarasami
09/17/2009 05:50 PM cc
bcc
Subject Re: forestry and agriculture

Whew, thanks again Lesley. I'll have both ag and forestry revised and ready for tomorrow.

Lesley Jantarasami Hey there, Here is the ag section at... 09/16/2009 04:31:59 PM

From: Lesley Jantarasami/DC/USEPA/US
To: Michael Kolian/DC/USEPA/US@EPA
Date: 09/16/2009 04:31 PM
Subject: Re: forestry and agriculture

Hey there,

Here is the ag section at last (b)(5) Deliberative I've also attached a study about climate impacts on wine grapes that may be helpful for one of your comment responses (I noted where in a comment bubble). Let me know if you have any questions or need any more sections reviewed.

[attachment "Agricultural Impacts comment response 9_08_09 merge LCJ.doc" deleted by Michael Kolian/DC/USEPA/US] [attachment "PNAS_Wine Impacts.pdf" deleted by Michael Kolian/DC/USEPA/US]

Cheers,

Lesley

Michael Kolian Lesley, that's terrific! (b)(5) deliberative 09/15/2009 04:51:29 PM

From: Michael Kolian/DC/USEPA/US
To: Lesley Jantarasami/DC/USEPA/US@EPA
Date: 09/15/2009 04:51 PM
Subject: Re: forestry and agriculture

Lesley, that's terrific! (b)(5) Deliberative

I'm very happy your looking at these.

Lesley Jantarasami Hey Mike, Here are my comments... 09/15/2009 04:08:47 PM

From: Lesley Jantarasami/DC/USEPA/US
To: Michael Kolian/DC/USEPA/US@EPA
Date: 09/15/2009 04:08 PM
Subject: Re: forestry and agriculture

Hey Mike,

Here are my comments on the Forestry section; still working on Ag. I think they are looking good! I made some suggestions (b)(5) Deliberative

EPA-EF-000963

(b)(5) Deliberative

Let me know if I can do anything else!

Lesley

[attachment "Forestry comment summary 9_08_09 merge LCJ.doc" deleted by Michael Kolian/DC/USEPA/US]

Michael Kolian Hi Lesley, Please review the following t... 09/15/2009 11:22:35 AM

From: Michael Kolian/DC/USEPA/US
To: Lesley Jantarasami/DC/USEPA/US@EPA
Date: 09/15/2009 11:22 AM
Subject: forestry and agriculture

Hi Lesley,
Please review the following two categories. Can you retain the comments and highlight for the time being and send back the updated versions when you've gone through them. I just want another version before it goes to quicker.

Thank you very much!

[attachment "Forestry comment summary 9_08_09 merge.doc" deleted by Lesley Jantarasami/DC/USEPA/US] [attachment "Agricultural Impacts comment response 9_08_09 merge.doc" deleted by Lesley Jantarasami/DC/USEPA/US]

EPA-698

Jason
Samenow/DC/USEPA/US
09/17/2009 07:21 PM

To Lesley Jantarasami
cc
bcc

Subject another category, observed extreme events

Here is another category for you. I'm still using the ERG database/old outline, so you may need to update.

Thanks!

Jason

(b)(5) Deliberative

9-5-4-extreme-weather-samenow.doc

EPA-699

Marcus Sarofim

To

cc

bcc

Subject UPGRADE C:\Documents and Settings\msarofim\My Documents\WorkFolder\Tsd_Anpr\ResponseToComments\ResponseChapters\2.3.2.2 -- Solar Irradiance.doc

(b)(5) Deliberative

- 2.3.2.2 -- Solar Irradiance.doc

EPA-700

Marcus Sarofim

To

cc

bcc

Subject UPLOAD C:\Documents and Settings\msarofim\My Documents\WorkFolder\Tsd_Anpr\ResponseToComments\ResponseChapters\2.3.2.3 Existence of GHG effect.doc

(b)(5) Deliberative

- 2.3.2.3 Existence of GHG effect.doc

EPA-EF-000967

EPA-701

Marcus Sarofim

To

cc

bcc

Subject UPGRADE C:\Documents and Settings\msarofim\My Documents\WorkFolder\Tsd_Anpr\ResponseToComments\ResponseChapters\2.2.1B- additions to Emissions and Concentrations.doc

(b)(5) Deliberative

- 2.2.1B- additions to Emissions and Concentrations.doc

EPA-702

Marcus Sarofim

To

cc

bcc

Subject UPGRADE C:\Documents and Settings\msarofim\My Documents\WorkFolder\Tsd_Anpr\ResponseToComments\ResponseChapters\2.4.2 - Greenhouse Gas Emissions and Concentrations (projected).doc

(b)(5) Deliberative

- 2.4.2 - Greenhouse Gas Emissions and Concentrations (projected).doc

EPA-EF-000969

EPA-703

Michael Kolian
05/12/2010 10:09 AM

To
cc
bcc

Subject UPLoad C:\Documents and Settings\Owner\My
Documents\Ccd\TSD comment period\Forestry comment
summary 9_18_09 merge.doc

(b)(5) Deliberative

- Forestry comment summary 9_18_09 merge.doc

EPA-EF-000970

EPA-704

Doug Grano

03/24/2010 11:34 AM

To

cc

bcc

Subject UPGRADE C:\Documents and Settings\dgrano\My Documents\WP\Climate\Rulemaking\Endangerment\Comment-response\RTC AQ 9-17_ncer.doc

(b)(5) Deliberative

- RTC AQ 9-17_ncer.doc

EPA-EF-000971

EPA-705

John Dawson/DC/USEPA/US
09/18/2009 10:59 AM

To Doug Grano, Ben DeAngelo
cc Darrell Winner, Bryan Bloomer
bcc
Subject Re: Continued discussion on response to public comments
re: TSD AQ

Doug and Ben,

Here are a couple minor comments and formatting changes from NCER.

(b)(5) Deliberative

RTC AQ 9-17_ncer.doc

John

John P. Dawson, Ph.D.
AAAS Science & Technology Policy Fellow
US EPA
Office of Research and Development (ORD/NCER) and Office of Air and Radiation (OAR/OPAR)
dawson.john@epa.gov
Phone: +1-202-343-9064

Doug Grano Ben-- I've gone through all the edits an... 09/17/2009 04:17:57 PM

From: Doug Grano/RTP/USEPA/US
To: Ben DeAngelo/DC/USEPA/US@EPA
Cc: Anne Grambsch/DC/USEPA/US@EPA, Bryan Bloomer/DC/USEPA/US@EPA, Bryan Hubbell/RTP/USEPA/US@EPA, Carey Jang/RTP/USEPA/US@EPA, Chris Weaver/DC/USEPA/US@EPA, Darrell Winner/DC/USEPA/US@EPA, Erika Sasser/RTP/USEPA/US@EPA, John Dawson/DC/USEPA/US@EPA, Larry Wallace/RTP/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, Pat Dolwick/RTP/USEPA/US@EPA, Phil Lorang/RTP/USEPA/US@EPA, Rona Birnbaum/DC/USEPA/US@EPA, Sara Terry/RTP/USEPA/US@EPA, Dale Everts/RTP/USEPA/US@EPA
Date: 09/17/2009 04:17 PM
Subject: Re: Continued discussion on response to public comments re: TSD AQ

Ben--
I've gone through all the edits and have attached a clean draft for you to add to the other responses.
--Doug

[attachment "RTC AQ 9-17.doc" deleted by John Dawson/DC/USEPA/US]

EPA-EF-000972

EPA-706

David
Chalmers/DC/USEPA/US
09/18/2009 11:05 AM

To: Jeremy Martinich
cc
bcc
Subject: Re: IPCC/CCSP Section

(b)(6)

2.1.1, Use of IPCC and CCSP + DBC.doc

will be up in 5

Jeremy Martinich Thanks dude. ***** Jere... 09/17/2009 05:38:07 PM

From: Jeremy Martinich/DC/USEPA/US
To: David Chalmers/DC/USEPA/US@EPA
Date: 09/17/2009 05:38 PM
Subject: IPCC/CCSP Section

[attachment "Section 2.1.1 Use of IPCC & CCSP as the Primary Scientific Basis.doc" deleted by David Chalmers/DC/USEPA/US]

Thanks dude.

Jeremy Martinich
USEPA, Climate Change Division
202-343-9871

EPA-707

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc

Subject UPGRADE F:\Endangerment\02_Comments and Responses\01_Sections\2.2.6 Extreme Weather_JS + LCJ 091809.doc

(b)(5) Deliberative

- 2.2.6 Extreme Weather_JS + LCJ 091809.doc

EPA-708

Michael Kolian
05/12/2010 10:09 AM

To
cc
bcc

Subject UPGOAD C:\Documents and Settings\Owner\My
Documents\Ccd\TSD comment period\Forestry comment
summary 9_18_09a merge.doc

(b)(5) Deliberative

- Forestry comment summary 9_18_09a merge.doc

EPA-709

Lesley
Jantarasami/DC/USEPA/US
09/18/2009 11:45 AM

To David Chalmers
cc
bcc

Subject Re: homeless comment

(b)(5) Deliberative

Regardless, this is how I thought they would fall within our outline (attached). Wouldn't hurt to follow up with authors just to make sure.

(b)(5) Deliberative

Chamber comments categorized.doc

David Chalmers

(b)(5) deliberative

09/17/2009 05:20:49 PM

From: David Chalmers/DC/USEPA/US
To: Lesley Jantarasami/DC/USEPA/US@EPA
Date: 09/17/2009 05:20 PM
Subject: homeless comment

(b)(5) Deliberative

Commenter Name: William L. Kovacs
Commenter Affiliation: Chamber of Commerce of the United States of America
Commenter Type:
Document Control Number: EPA-HQ-OAR-2009-0171-3411.1
Comment Excerpt Number: 21
Form Letter? No
Late Comment? No
Comment Changed? No
[View Original Comment Letter](#)

EPA's own docket shows that other federal agencies recognized many of the shortcomings in the Proposed Endangerment Finding. OMB identified many defects in the scientific endangerment finding proposed by EPA. First, and perhaps most important, OMB flagged that the Proposed Endangerment Finding over-relies on the "precautionary principle." [112] "The finding rests heavily on the precautionary principle, but the amount of acknowledged lack of understanding about basic facts surrounding GHGs seem to stretch the precautionary principle to providing for regulation in the face of unprecedented uncertainty." OMB, First (1st) Round of OMB Comments to USEPA on the Proposed Findings, available at <http://www.regulations.gov/fdmspublic/component/main?main=DocumentDetail&o=0900006480965abd>, at 1 (last visited June 22, 2009) [hereafter "OMB Comments on Proposed Endangerment Finding"] (emphasis added). This is not an insignificant matter. OMB called EPA to task for "applying a dramatically expanded precautionary principle." Id. at 2 (emphasis added). [Footnote 112: Cass Sunstein has defined the precautionary principle as follows: "In case of doubt, follow the precautionary principle. Avoid steps that will create a risk of harm. Until safety is established, be cautious; do not require unambiguous evidence. In a catchphrase: better safe than sorry." Cass R. Sunstein, *Beyond the Precautionary Principle*, 151 U. PA. L. REV. 1003, 1003-04 (2003) [hereafter "Sunstein, Precautionary Principle."].] OMB's statement on this subject should not be surprising given the analytical scholarship of the President's own pick to be Administrator of OMB's Office of

EPA-EF-000976

Information and Regulatory Affairs (“OIRA”), Harvard Law Professor Cass Sunstein. Sunstein has severely criticized use of the precautionary principle in any fashion: “Taken in this strong form, the precautionary principle should be rejected, not because it leads in bad directions, but because it leads in no direction at all. The principle is literally paralyzing—forbidding inaction, stringent regulation, and everything in between. The reason is that in the relevant cases, every step, including inaction, creates a risk to health, the environment, or both. This point raises a further puzzle: Why is the precautionary principle widely seen to offer real guidance? The answer lies in identifiable cognitive mechanisms emphasized by behavioral economists. In many cases, loss aversion plays a large role, accompanied by a false belief that nature is benign. Sometimes the availability heuristic is at work. Probability neglect plays a role as well. Most often, those who use the precautionary principle fall victim to what might be called “system neglect,” which involves a failure to attend to the systemic effects of regulation. Examples are given from numerous areas, involving arsenic regulation, global warming and the Kyoto Protocol, nuclear power, pharmaceutical regulation, cloning, pesticide regulation, and genetic modification of food. The salutary moral and political goals of the precautionary principle should be promoted through other, more effective methods.” Sunstein, *Precautionary Principle*, U. PA. L. REV. at 1003 (emphasis added). These kinds of heuristic effects are supposed to influence only the failure of individuals to properly assess risk, not an entire body of supposedly expert regulators. Yet, OMB stated that EPA had fallen prey to the same kind of biases associated with the “failure to attend to the systemic effects of regulation.” *Id.* Compare OMB Comments on Proposed Endangerment Finding, at 2 (“The Finding should also acknowledge that EPA has not undertaken a systematic risk analysis or cost-benefit analysis.”) (emphasis added). Second, OMB noted that EPA’s public health analysis failed to account for the fact that “the impact of climate-sensitive diseases may be minimal in a rich country like the US.” OMB Comments on Proposed Endangerment Finding, at 1. Third, OMB questioned why EPA was focusing so heavily on ostensible ozone effects from climate change when EPA already had existing Clean Air Act regulations designed to regulate ozone. See *id.* Fourth, OMB noted that EPA had failed to explain why Title VI of the Clean Air Act (the international program that is part of the Montreal Protocol) was not the superior policy device to deal with GHG regulation, particularly given the differing properties and characteristics of GHGs other than carbon dioxide. See *id.* at 2. Fifth, as the Chamber has repeatedly called to EPA’s attention, OMB expressed the view that the Proposed Endangerment Finding could create a regulatory cascade. See *id.* at 2-3. Sixth, OMB criticized EPA for doing a static analysis that did not take account of the fact that people, especially in America, would take steps to adapt and even migrate in response to any climate change that might occur. The foregoing six problems just scratch the surface of problems communicated by OMB with regards to EPA’s Proposed Endangerment Finding, which ought to be considered and resolved on-the-record.

Thanks,

David Chalmers
ORISE Fellow
U.S. EPA, Climate Change Division
202.343.9814

EPA-710

William Perkins/DC/USEPA/US
09/18/2009 11:51 AM

To Jason Samenow
cc
bcc
Subject Alaskan temperature issue -- came up in infrastructure chapter

Jason,

Below is the summarized comment, .pdf of the 2 relevant pages from the commenter, and a URL for the Alaska Climate Research Center at University of Alaska Fairbanks research on the temperature trends in Alaska. We can chat about this at your convenience if you would like and thank you for your time and attention.

Cheers,

Bill

Summarized comment

(b)(5) Deliberative

<http://climate.gi.alaska.edu/ClimTrends/Change/TempChange.html>



Temp graphs 3596.2.pdf

Bill Perkins
Climate Change Adaptation Analyst
Climate Science and Impacts Branch
Climate Change Division
U.S. Environmental Protection Agency
perkins.william@epa.gov
(O) 202.343.9460
(F) 202.343.2202
(C) (b)(6)

EPA-EF-000978

6. There are no long-term trends in either heat waves or cold spells, though there are trends within shorter time periods in the overall record.

Pielke Jr.'s full review is located on his weblog (http://sciencepolicy.colorado.edu/prometheus/archives/climate_change/index.html#001462)

Also, recent research does not strongly support the idea of increased hurricane frequency or intensity in the future, as noted above.

The lack of correspondence between global temperature and extreme events in the United States undermines any support for *Proposed Endangerment* in this area.

TSD Implies a 30-year Trend in Alaskan Temperatures that in Reality was a Jump Inconsistent with Models of Global Warming (Page 109, Last Paragraph)

TSD states, on page 109, last paragraph, that:

Because of warming, the number of days per year in which travel on the tundra is allowed under Alaska Department of Natural Resources standards has dropped from over 200 to about 100 in the past 30 years...

Hartmann and Wendler (2005) demonstrated a single jump in temperatures in Alaska occurred 30 years ago (Figure 44) This temperature change is explained by the natural cycles of the Pacific Decadal Oscillation—not anthropogenic global warming. Temperatures in Alaska have not warmed in the past 30 years (Figure 45).

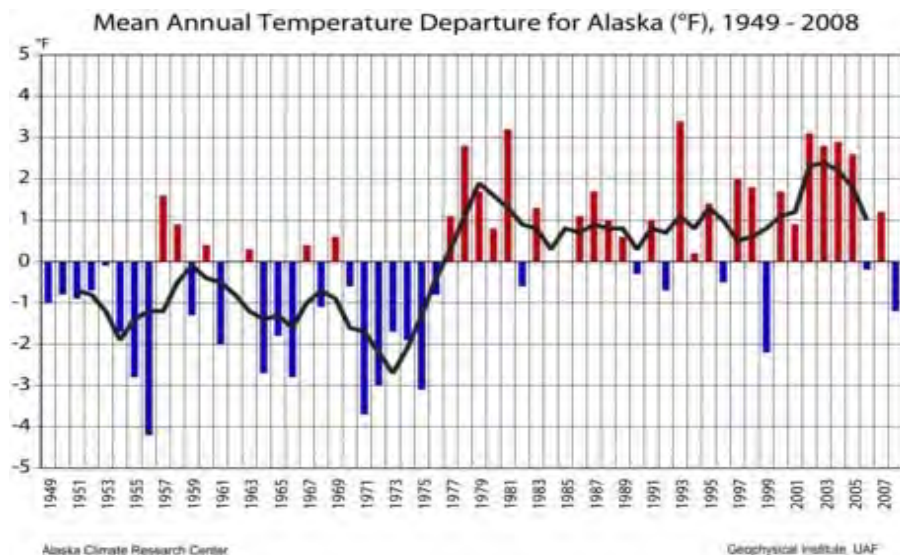


Figure 53. Statewide average temperature in Alaska, 1949-2008. Note the step up in 1977 (source: Alaska Climate Research Center, <http://climate.gi.alaska.edu/ClimTrends/Change/TempChange.html>)

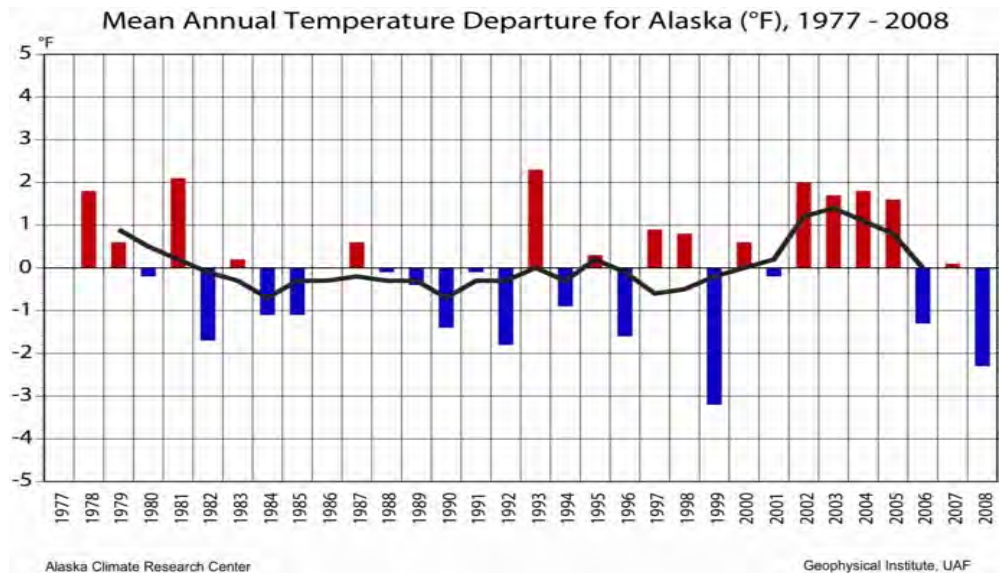


Figure 45. Statewide average temperatures in Alaska, 1977-2007. Notice that there has been no overall warming in the past 31 years there (source: Alaska Climate Research Center, <http://climate.gi.alaska.edu/ClimTrends/Change/7708Change.html>)

TSD Greatly Exaggerates the Effects of Prospective Climate Change on Ecosystem Distribution (Page 113, First Bullet)

TSD states on Page 113, first bullet, that “changes in climate will cause species to shift north....and fundamentally rearrange North American ecosystems”.

The primary citation on this in Field et al. (2007; the North America chapter of IPCC WQ II) is Root et al, 2003, *Nature*. The northward ecosystem migration in Root works out to 3.8 miles per *decade*, which would have the effect of moving the District of Columbia’s natural biological community to Baltimore by 2102. Given that the rate of warming is largely projected to be constant by the ensemble of AIB models, this can be expected to continue. Another primary citation is Parmesan and Yohe, 2003, *Nature*, which calculates the observed rate of change in the onset of Spring. Her calculations indicate that spring 2103 would arrive in Washington (everything else being equal) about the time it arrives today in Raleigh, North Carolina, a distance of 232 miles. In other words, Washington will enjoy the growing season of Raleigh a century from now.

Amphibian Phenology and Mortality (Page 114, Second and Fourth Bullets)

TSD states on page 114, second bullet, that “Several frog species now initiate breeding calls 10-13 days earlier than a century ago”.

The primary citation for this is Gibbs and Breisch (2001). Their study was confined to the area around Ithaca, New York. It compared records of the earliest calling dates during the first decade of the 20th century to the data collected in the 1990s. This was a prime example of ignoring important data. The figure below (Figure 46) gives the all the

EPA-711

Lesley Jantarasami/DC/USEPA/US
09/18/2009 11:55 AM

To David Chalmers
cc
bcc

Subject Re: homeless comment

Yes, [REDACTED] (b)(5) Deliberative
[REDACTED] Ben has been the coordinator of that effort, so I say forward that one to him to pass on.

Thanks!

Lesley

David Chalmers Thanks, Lesley. [REDACTED] (b)(5) Deliberative 09/18/2009 11:51:22 AM

From: David Chalmers/DC/USEPA/US
To: Lesley Jantarasami/DC/USEPA/US@EPA
Date: 09/18/2009 11:51 AM
Subject: Re: homeless comment

Thanks, Lesley. [REDACTED] (b)(5) Deliberative
[REDACTED]

Have a great weekend!

David Chalmers
ORISE Fellow
U.S. EPA, Climate Change Division
202.343.9814

Lesley Jantarasami [REDACTED] (b)(5) Deliberative 09/18/2009 11:45:48 AM

From: Lesley Jantarasami/DC/USEPA/US
To: David Chalmers/DC/USEPA/US@EPA
Date: 09/18/2009 11:45 AM
Subject: Re: homeless comment

[REDACTED] (b)(5) Deliberative
[REDACTED]

[attachment "Chamber comments categorized.doc" deleted by David Chalmers/DC/USEPA/US]

David Chalmers [REDACTED] (b)(5) Deliberative 09/17/2009 05:20:49 PM

From: David Chalmers/DC/USEPA/US
To: Lesley Jantarasami/DC/USEPA/US@EPA
Date: 09/17/2009 05:20 PM

EPA-EF-000981

Subject: homeless comment

(b)(5) Deliberative

Commenter Name: William L. Kovacs
Commenter Affiliation: Chamber of Commerce of the United States of America
Commenter Type:
Document Control Number: EPA-HQ-OAR-2009-0171-3411.1
Comment Excerpt Number: 21
Form Letter? No
Late Comment? No
Comment Changed? No
[View Original Comment Letter](#)

EPA's own docket shows that other federal agencies recognized many of the shortcomings in the Proposed Endangerment Finding. OMB identified many defects in the scientific endangerment finding proposed by EPA. First, and perhaps most important, OMB flagged that the Proposed Endangerment Finding over-relies on the "precautionary principle." [112] "The finding rests heavily on the precautionary principle, but the amount of acknowledged lack of understanding about basic facts surrounding GHGs seem to stretch the precautionary principle to providing for regulation in the face of unprecedented uncertainty." OMB, First (1st) Round of OMB Comments to USEPA on the Proposed Findings, available at <http://www.regulations.gov/fdmspublic/component/main?main=DocumentDetail&o=0900006480965abd>, at 1 (last visited June 22, 2009) [hereafter "OMB Comments on Proposed Endangerment Finding"] (emphasis added). This is not an insignificant matter. OMB called EPA to task for "applying a dramatically expanded precautionary principle." Id. at 2 (emphasis added). [Footnote 112: Cass Sunstein has defined the precautionary principle as follows: "In case of doubt, follow the precautionary principle. Avoid steps that will create a risk of harm. Until safety is established, be cautious; do not require unambiguous evidence. In a catchphrase: better safe than sorry." Cass R. Sunstein, *Beyond the Precautionary Principle*, 151 U. PA. L. REV. 1003, 1003-04 (2003) [hereafter "Sunstein, Precautionary Principle."].] OMB's statement on this subject should not be surprising given the analytical scholarship of the President's own pick to be Administrator of OMB's Office of Information and Regulatory Affairs ("OIRA"), Harvard Law Professor Cass Sunstein. Sunstein has severely criticized use of the precautionary principle in any fashion: "Taken in this strong form, the precautionary principle should be rejected, not because it leads in bad directions, but because it leads in no direction at all. The principle is literally paralyzing—prohibiting inaction, stringent regulation, and everything in between. The reason is that in the relevant cases, every step, including inaction, creates a risk to health, the environment, or both. This point raises a further puzzle: Why is the precautionary principle widely seen to offer real guidance? The answer lies in identifiable cognitive mechanisms emphasized by behavioral economists. In many cases, loss aversion plays a large role, accompanied by a false belief that nature is benign. Sometimes the availability heuristic is at work. Probability neglect plays a role as well. Most often, those who use the precautionary principle fall victim to what might be called "system neglect," which involves a failure to attend to the systemic effects of regulation. Examples are given from numerous areas, involving arsenic regulation, global warming and the Kyoto Protocol, nuclear power, pharmaceutical regulation, cloning, pesticide regulation, and genetic modification of food. The salutary moral and political goals of the precautionary principle should be promoted through other, more effective methods." Sunstein, *Precautionary Principle*, U. PA. L. REV. at 1003 (emphasis added). These kinds of heuristic effects are supposed to influence only the failure of individuals to properly assess risk, not an entire body of supposedly expert regulators. Yet, OMB stated that EPA had fallen prey to the same kind of biases associated with the "failure to attend to the systemic effects of regulation." Id. Compare OMB Comments on Proposed Endangerment Finding, at 2 ("The Finding should also acknowledge that EPA has not undertaken a systematic risk analysis or cost-benefit analysis.") (emphasis added). Second, OMB noted that EPA's public health analysis failed to account for the fact that "the impact of climate-sensitive diseases may be minimal in a rich country like the US." OMB Comments on Proposed Endangerment Finding, at 1. Third, OMB questioned why

EPA was focusing so heavily on ostensible ozone effects from climate change when EPA already had existing Clean Air Act regulations designed to regulate ozone. See *id.* Fourth, OMB noted that EPA had failed to explain why Title VI of the Clean Air Act (the international program that is part of the Montreal Protocol) was not the superior policy device to deal with GHG regulation, particularly given the differing properties and characteristics of GHGs other than carbon dioxide. See *id.* at 2. Fifth, as the Chamber has repeatedly called to EPA's attention, OMB expressed the view that the Proposed Endangerment Finding could create a regulatory cascade. See *id.* at 2-3. Sixth, OMB criticized EPA for doing a static analysis that did not take account of the fact that people, especially in America, would take steps to adapt and even migrate in response to any climate change that might occur. The foregoing six problems just scratch the surface of problems communicated by OMB with regards to EPA's Proposed Endangerment Finding, which ought to be considered and resolved on-the-record.

Thanks,

David Chalmers
ORISE Fellow
U.S. EPA, Climate Change Division
202.343.9814

EPA-712

Jason
Samenow/DC/USEPA/US
09/18/2009 11:56 AM

To William Perkins
cc
bcc
Subject Re: Alaskan temperature issue -- came up in infrastructure chapter

(b)(5) Deliberative

jason

William Perkins Jason, Below is the summarized comm... 09/18/2009 11:51:25 AM

From: William Perkins/DC/USEPA/US
To: Jason Samenow/DC/USEPA/US@EPA
Date: 09/18/2009 11:51 AM
Subject: Alaskan temperature issue -- came up in infrastructure chapter

Jason,

Below is the summarized comment, .pdf of the 2 relevant pages from the commenter, and a URL for the Alaska Climate Research Center at University of Alaska Fairbanks research on the temperature trends in Alaska. We can chat about this at your convenience if you would like and thank you for your time and attention.

Cheers,

Bill

Summarized comment

(b)(5) Deliberative

<http://climate.gi.alaska.edu/ClimTrends/Change/TempChange.html>

[attachment "Temp graphs 3596.2.pdf" deleted by Jason Samenow/DC/USEPA/US]

Bill Perkins
Climate Change Adaptation Analyst
Climate Science and Impacts Branch
Climate Change Division
U.S. Environmental Protection Agency
perkins.william@epa.gov
(O) 202.343.9460
(F) 202.343.2202
(C) (b)(6)

EPA-EF-000984

EPA-713

Marcus Sarofim

To

cc

bcc

Subject UPGRADE C:\Documents and Settings\msarofim\My Documents\WorkFolder\Tsd_Anpr\ResponseToComments\ResponseChapters\4.1.2.1 -- General (proposed definition of air pollution).doc

(b)(5) Deliberative

- 4.1.2.1 -- General (proposed definition of air pollution).doc

EPA-714

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc

Subject UPGRADE F:\Endangerment\02_Comments and Responses\01_Sections\Human Health comment summary 9_18_09_merge.doc

(b)(5) Deliberative

- Human Health comment summary 9_18_09_merge.doc

EPA-715

Michael Kolian/DC/USEPA/US
09/18/2009 01:30 PM

To Lesley Jantarasami
cc
bcc

Subject Re: style consistency and references

Human Health,

(b)(5) Deliberative

Human Health comment summary 9_18_09_merge.doc

Lesley Jantarasami Hey team, I wanted to send around... 09/18/2009 12:35:04 PM

From: Lesley Jantarasami/DC/USEPA/US
To: David Chalmers/DC/USEPA/US@EPA, Jason Samenow/DC/USEPA/US@EPA, Jeremy Martinich/DC/USEPA/US@EPA, Marcus Sarofim/DC/USEPA/US@EPA, Michael Kolian/DC/USEPA/US@EPA, William Perkins/DC/USEPA/US@EPA, Ben DeAngelo/DC/USEPA/US, Rona Birnbaum/DC/USEPA/US@EPA
Date: 09/18/2009 12:35 PM
Subject: style consistency and references

Hey team,

I wanted to send around some guidance (subject to change) about style when writing your summaries and responses. This is all easy stuff for me to change as I review your sections, so don't worry about it for the ones you've already completed. But it would be very helpful as you write new sections to keep in mind the following:

- As you write summaries, use the model below instead of the model used in the mercury rule RTC document (b)(5) Deliberative
- (b)(5) Deliberative
- For references, keep going with the in-text, parenthetical citations that you all have been using. For any new literature cited in your responses that will not be added to the TSD references, please put the full citation in a footnote for now. For things quoted or summarized from the TSD, we're assuming our readers can get the full citation there. That's how the mercury rule RTC doc did it, and we'll check to see how the mandatory reporting rule folks did it.

Comment:

(b)(5) Deliberative

Response:

(b)(5) Deliberative

EPA-EF-000987

(b)(5) Deliberative

Let me know if you have any questions!

Thanks,

Lesley

EPA-716

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc

Subject UPGOAD F:\Endangerment\02_Comments and
Responses\01_Sections\2.5.10 National Security 091809.doc

(b)(5) Deliberative

- 2.5.10 National Security 091809.doc

EPA-717

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc

Subject UPGRADE F:\Endangerment\02_Comments and Responses\01_Sections\2.5.2 Air Quality_OAQPS + BLD 091609.doc

(b)(5) Deliberative

- 2.5.2 Air Quality_OAQPS + BLD 091609.doc

EPA-718

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc

Subject UPGRADE F:\Endangerment\02_Comments and
Responses\01_Sections\4.1.5.1.4 NAAQS_OAQPS + BJD
091609.doc

(b)(5) Deliberative

- 4.1.5.1.4 NAAQS_OAQPS + BJD 091609.doc

EPA-EF-000991

EPA-719

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc

Subject UPGOAD F:\Endangerment\02_Comments and Responses\01_Sections\4.1.5 OAQPS + BLD 091609doc.doc

(b)(5) Deliberative

- 4.1.5 OAQPS + BLD 091609doc.doc

EPA-720

Lesley Jantarasami
04/01/2010 03:38 PM

To
cc
bcc

Subject UPGOAD F:\Endangerment\02_Comments and
Responses\01_Sections\2.1.3 Other Scientific Assessments
091809.doc

(b)(5) Deliberative

- 2.1.3 Other Scientific Assessments 091809.doc