

Subject: Re: Nutrient Leaching

Date: Thursday, March 3, 2016 at 9:28:28 AM Mountain Standard Time

From: Case,Shaun

To: Hesketh, Eric - NRCS, Amherst, MA, Jack Carlson

CC: Miller, Andrew - NRCS, Washington, DC, David,Olaf, Bagdon, Joseph - NRCS, Amherst, MA

Tried some HTML reformatting below as the formatting may have been lost in the original message....Please see below:

From: Shaun Case <Shaun.Case@ColoState.EDU>

Date: Thursday, March 3, 2016 at 9:26 AM

To: "Hesketh, Eric - NRCS, Amherst, MA" <eric.hesketh@ma.usda.gov>, Jack Carlson <pspicata@rams.colostate.edu>

Cc: "Miller, Andrew - NRCS, Washington, DC" <Andrew.L.Miller@wdc.usda.gov>, "David,Olaf" <Olaf.David@colostate.edu>, "Bagdon, Joseph - NRCS, Amherst, MA" <joseph.bagdon@ma.usda.gov>

Subject: Re: Nutrient Leaching

Hi Eric,

Sure.

1.0 Currently:

- 1.1) WQM-02 can be called by WQM-21 or can be called separately/independently.
- 1.2) WQM-05 can be called by WQM-21 or can be called separately/independently.
- 1.3) WQM-21 can call WQM-02 before calling WQM-05/06, or can be used to call WQM-05/06 without calling WQM-02.

2.0 Discussion:

- 2.1) Altering the output of WQM-02 is not an issue and would not affect any other services or client programs that I am aware of. Are there any concerns others have?
- 2.2) Altering the input of WQM-05 to accept the new output of WQM-02 requires a change to the WQM-05 logic.
 - a) In the cases where WQM-05 is called independently of the service call chain from WQM-21 it will require a new parameter (wtbl top min) to be specified in order to alter the calculations as requested
 - i) This requires the calling client software to have collected this value from somewhere in order to specify it as input.
 - ii) In the cases where the calling client software cannot specify this value, i.e. has no way of uncovering its value
 - 1) A default value must be used

- 2) Or the calculation logic will need to account for its missing state.
- b) When WQM-05 is called from WQM-21, without the specification in input that causes WQM-02 to be called first, then WQM-21 needs to generate this value somehow.
 - i) This can be added as a new required parameter to WQM-21 in the cases where WQM-02 is not specified as being called, based on the current input methods.
 - ii) This can be some default value as in 2.2.a.ii.1 or some altered logic as in 2.2.a.ii.2.

Hope this helps.

Thanks,
Shaun.

From: "Hesketh, Eric - NRCS, Amherst, MA" <eric.hesketh@ma.usda.gov>
Date: Thursday, March 3, 2016 at 9:08 AM
To: Shaun Case <Shaun.Case@ColoState.EDU>, Jack Carlson <pspicata@rams.colostate.edu>
Cc: "Miller, Andrew - NRCS, Washington, DC" <Andrew.L.Miller@wdc.usda.gov>, "David,Olaf" <Olaf.David@colostate.edu>, "Bagdon, Joseph - NRCS, Amherst, MA" <joseph.bagdon@ma.usda.gov>
Subject: RE: Nutrient Leaching

Shaun:

Could you clarify 1) below?

Eric

From: Case,Shaun [<mailto:Shaun.Case@ColoState.EDU>]
Sent: Thursday, March 03, 2016 10:41 AM
To: Whitley, Christine - NRCS, Fort Collins, CO <Christine.Whitley@ftc.usda.gov>; Jack Carlson <pspicata@rams.colostate.edu>
Cc: Miller, Andrew - NRCS, Washington, DC <Andrew.L.Miller@wdc.usda.gov>; David,Olaf <Olaf.David@colostate.edu>; Hesketh, Eric - NRCS, Amherst, MA <eric.hesketh@ma.usda.gov>; Bagdon, Joseph - NRCS, Amherst, MA <joseph.bagdon@ma.usda.gov>
Subject: Re: Nutrient Leaching

:-)

Answers:

- 1) Yes. Just a quick one, most likely, about how they would like the services, which are also available outside of the call to WQM-21, to change in light of the change request. Specifically, should we add a new required parameter, or make it optional with either a default value or default logic to pursue if it is missing from the input.
- 2) Yes and no. We do have a separate tracker system, which I am happy to update. However, since I do not

have access to your tracker system, I don't have the information from it to make a tracker on our side. (Like you, I prefer to keep duplicate copies of things, if any, as exact copies of each other.)

3) I will keep you updated if there are any changes.

Eric, Joe,

Please feel free to contact me with any discussion or details I may have missed.

Thanks,

Shaun.

From: "Whitley, Christine - NRCS, Fort Collins, CO" <Christine.Whitley@ftc.usda.gov>
Date: Thursday, March 3, 2016 at 8:31 AM
To: Shaun Case <Shaun.Case@ColoState.EDU>, Jack Carlson <pspicata@rams.colostate.edu>
Cc: "Miller, Andrew - NRCS, Washington, DC" <Andrew.L.Miller@wdc.usda.gov>, "David,Olaf" <Olaf.David@colostate.edu>, "Hesketh, Eric - NRCS, Amherst, MA" <eric.hesketh@ma.usda.gov>, "Bagdon, Joseph - NRCS, Amherst, MA" <joseph.bagdon@ma.usda.gov>
Subject: RE: Nutrient Leaching

You are so good at responding promptly Shaun – I appreciate it.

You are saying you need to discuss yesterday's clarification questions with Eric / Joe?
And then (CSU) has a tracker which needs to be updated with the results?
Any details added please give me a list / summary – I would like to update our tracker here.

I will just watch for your notification that you have the clarifications you need then.

Christine Whitley

USDA/NRCS Contractor – Team Vistronix

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From: Case,Shaun [<mailto:Shaun.Case@ColoState.EDU>]
Sent: Thursday, March 03, 2016 8:18 AM
To: Whitley, Christine - NRCS, Fort Collins, CO <Christine.Whitley@ftc.usda.gov>; Jack Carlson <pspicata@rams.colostate.edu>
Cc: Miller, Andrew - NRCS, Washington, DC <Andrew.L.Miller@wdc.usda.gov>; David,Olaf <Olaf.David@colostate.edu>
Subject: Re: Nutrient Leaching

Christine,

No problem, I will let you know. But, first, we need to finish the discussion/clarification and I will need to get a copy of the details of the tracker request so that I can follow it correctly and not miss anything new or changed that may be altered post discussion from the detail of Eric's email.

Thanks!
Shaun.

From: "Whitley, Christine - NRCS, Fort Collins, CO" <Christine.Whitley@ftc.usda.gov>
Date: Thursday, March 3, 2016 at 7:22 AM
To: Shaun Case <Shaun.Case@ColoState.EDU>, Jack Carlson <pspicata@rams.colostate.edu>
Cc: "Miller, Andrew - NRCS, Washington, DC" <Andrew.L.Miller@wdc.usda.gov>, "David,Olaf" <Olaf.David@colostate.edu>
Subject: RE: Nutrient Leaching

Thank you Shaun –

I am glad to hear this is straightforward! When you have a target date in mind, we would love to know it J

Christine Whitley

USDA/NRCS Contractor – Team Vistrionix
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From: Case,Shaun [<mailto:Shaun.Case@ColoState.EDU>]
Sent: Wednesday, March 02, 2016 9:35 AM
To: Jack Carlson <pspicata@rams.colostate.edu>
Cc: Miller, Andrew - NRCS, Washington, DC <Andrew.L.Miller@wdc.usda.gov>; Whitley, Christine - NRCS, Fort Collins, CO <Christine.Whitley@ftc.usda.gov>; David,Olaf <Olaf.David@colostate.edu>
Subject: Re: Nutrient Leaching

Jack, et al,

No problem adding this code. It looks very straight-forward. I would think this wouldn't take more than 1-2 days.

We need to clarify however:

- If NutrientSLP (WQM-05) needs to have these changes for any and all input cases, or just those coming via WQM-21 (i.e. Any calls to WQM-05 or just WQM-02 output sent into WQM-05 via WQM-21).
- Also, not all WQM-21 inputs require a stop-over in WQM-02, so for those cases where WQM-21 is being called to chain WQM-05 with WQM-06 minus WQM-02, we need this value specified in the input JSON, or if that is not desired, then we would send this only when WQM-02-05-06 is the desired chain from WQM-21, however, this introduces the problem of not having this value in WQM-05 when it is called outside of the WQM-21 (02/05/06) chain...

Thanks,
Shaun.

From: Jack Carlson <pspicata@rams.colostate.edu>
Date: Wednesday, March 2, 2016 at 9:22 AM
To: Shaun Case <Shaun.Case@ColoState.EDU>
Cc: "Miller, Andrew - NRCS, Washington, DC" <Andrew.L.Miller@wdc.usda.gov>, "Whitley, Christine - NRCS, Fort Collins, CO" <Christine.Whitley@ftc.usda.gov>, "David,Olaf" <Olaf.David@colostate.edu>
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Shaun,

Please add this item to the top of the to-do list, and could you provide a rough estimate of the time needed to make and post the change? This has priority with the map-unit fix relative to other CDSI-related workload (GRAS, etc.).

Also assume we'll discuss the tracker issue at this afternoon's dev meeting.

Thanks.

Jack

On Mar 2, 2016, at 9:12 AM, Whitley, Christine - NRCS, Fort Collins, CO <Christine.Whitley@ftc.usda.gov> wrote:

Hello Jack –

Having discussed this update to Soil Leaching Potential with Aaron Lauster, he indicates that this would be a high priority fix prior to the initial release of RS.

Basically if we don't adjust the SLP for the first release, and then adjust it afterwards, any

results from the first release will change when the second release comes out – something to be avoided if possible.

That said, the change you are already working on to handle the missing-map-unit issue is at least equally important and we don't want to stop that.

So, when are we getting the missing-map-unit-fix, and how long would it take for you to also provide this NEW request below?

Aaron is basically saying – we need this change below... unless it turns out to extend our release date unreasonably.

Please advise of the likely availability – we would like this fix if possible.

I do understand that you guys are performing wonderful feats for the RS project AND BEYOND... and we all appreciate it immensely.

- Christine

Regarding Trackers – I have entered trackers in our CoLab for this, but your team won't have access to this area, will they? I know you have your own CodeBeamer site though. Any suggestions as to how we could have tracker visibility on both sides for this? It would be very nice to have this, agree.

From: Hesketh, Eric - NRCS, Amherst, MA
Sent: Friday, February 19, 2016 4:33 PM
To: Jack Carlson <pspicata@rams.colostate.edu>; shaun.case@colostate.edu
Subject: Nutrient Leaching

Jack and Shaun:

I have a few small changes to the nutrient leaching logic. I tried to make it as similar to pesticide leaching as I could, but it looks like it won't work. Hopefully the changes will be easy to implement.

Unfortunately, we need to return a value from the soils service WQMSoilAttributes. Fortunately, it's already calculated.

We need to output the `wtbl_top_min` so it can be passed to Nutrient SLP.

In Nutrient SLP:

- 1) Leaching will be set to "high" if the `wtbl_top_min` \leq 76 cm AND the water table kind is apparent. (`Hwt_lt_24` is no longer used for nutrient

- leaching)
- 2) Drainage has no effect on the leaching rating.
 - 3) For nutrients Water table will be set via soils data `wtbl_top_min` ≤ 76 cm AND the water table kind is apparent, there will be no allowance for the user to set the water table in any other way.
 - 4) Dual hydrologic group soils receive a “High” because drainage will not be taken into account.

There is no change in the current code for “Histosols”.

Eric Hesketh

Technical Contact/Developer WIN-PST
Soil Scientist/Pest Management Specialist
Water Quality and Quantity Team, WNTSC
Amherst MA, 01002
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