

2015 International SWAT Conference

AWARDS

A decorative graphic consisting of a solid teal horizontal bar that transitions into a series of three parallel, slightly offset white lines on the right side of the slide.

Young Scientist

- Dr. Katrin Bieger, Blackland Research and Extension Center, Texas A&M AgriLIFE Research



Senior Scientist

- Dr. Valentina Krysanova
- PIK, Germany



Student/Post Doc of the Year

- Dr. Prasad Daggupati
- Spatial Sciences Lab, Texas A&M University



Most Cited Paper

- Dr. Santhi Chinnasamy
- Blackland Research and Extension Center
- Texas AgriLIFE Research



2015 International SWAT Conference

Soil and Water Assessment Tool

R. Srinivasan

r-srinivasan@tamu.edu

Blackland Research and Extension Center & Ecosystem

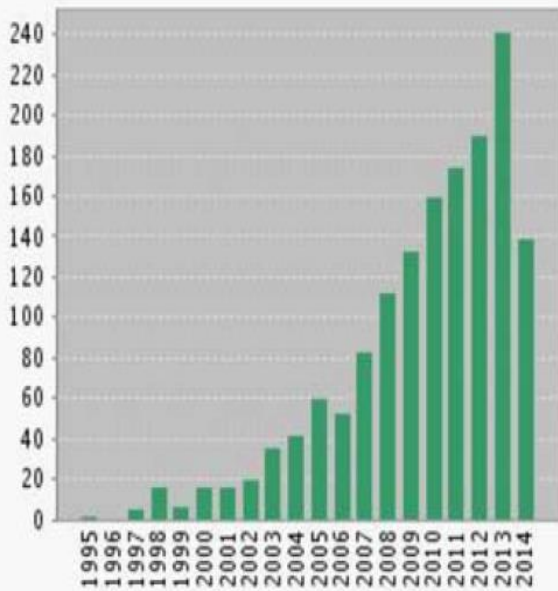
Science and Management

Texas A&M University

*** Several slides were contributed by various individuals**

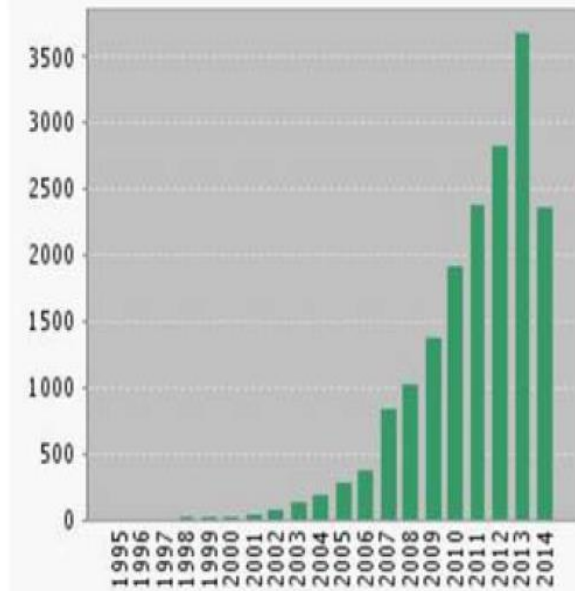
Historical Trends of Published SWAT-Related Peer-Reviewed Articles (2,200 in Total)

Published Items in Each Year



The latest 20 years are displayed.
[View a graph with all years.](#)

Citations in Each Year



The latest 20 years are displayed.

Results found: 1511
Sum of the Times Cited [?]: 17745
Sum of Times Cited without self-citations [?]: 8891
Citing Articles [?]: 6441
Citing Articles without self-citations [?]: 5311
Average Citations per Item [?]: 11.74
h-index [?]: 56

Source: SWAT Literature Database as of July 20, 2014 (including articles not yet released to the database); https://www.card.iastate.edu/swat_articles/index.aspx

Send your completed paper to swatbrazil2014@gmail.com
Please no more than 12 pages, 12 pt. font



The SWAT Literature Database: Overview of Database Structure and Key SWAT Literature Trends

Philip W. Gassman*, Curtis Balmer, Mark Siemers

Center for Agricultural and Rural Development (CARD), Iowa State Univ., Ames, IA
(pwgassma@iastate.edu (corresponding author); curtb@iastate.edu; marks@iastate.edu)

Raghavan Srinivasan

Spatial Sciences Lab., Dept. of Ecosystem Science and Management, Texas A&M Univ.,
College Station, Texas, USA (r.srinivasan@tamu.edu)

Hydrological Processes 132	Science of the Total Environment 23
Transactions of the ASABE 108	Water Science and Technology 23
Journal of Hydrology 93	Physics and Chemistry of the Earth, Parts A/B/C 22
Journal of the American Water Resources Association 88	Advances in Geosciences 19
Journal of Environmental Quality 47	Journal of Environmental Management 19
Water Resources Management 43	International Agricultural Engineering Journal 13
Hydrology and Earth System Sciences 40	Journal of Water Resources Planning and Management 13
Journal of Soil and Water Conservation 39	Water International 13
Ecological Modelling 38	Climatic Change 12
Journal of Hydrologic Engineering 37	Environmental Management 12
Environmental Modelling & Software 36	Environmental Modeling and Assessment 11
Water Resources Research 36	Journal of Environmental Monitoring 11
Agricultural Water Management 34	Advances in Water Resources 10
Hydrological Sciences Journal 33	Environmental Earth Sciences 10
Transactions of the ASAE 32	Journal of Water Resource and Protection 10

Distribution of Journals

- A total of 510 journals included in current database
- Most published in English; some in other languages
- **Assumed that articles are published via a true peer-reviewed process**
- Some of the journals are published by suspected “Predatory Publishers”
 - see <http://scholarlyoa.com/publishers/>

Broad Categories in Database

Category	Total papers	Category	Total papers
hydrologic only	1,051	computational approaches	12
hydrologic & pollutant	787	pre-SWAT or SWAT-related	10
pollutant only	170	overview of special issue, etc.	8
review/history	64	literature citation analysis	7
interface tool and/or other software	24	BMP review or conceptual approach	6
conceptual approach	19	carbon cycling	3
data or component development	17	watershed descriptions	3
crop/plant growth	14		

Distribution of Models in Database

Specific model or category	Total papers
SWAT	1492
ESWAT	9
SWAT-G	14
SWIM	31
SWAT (modified)	80
SWAT (modified) & SWAT	27
PRE-SWAT or SWAT-related***	12
PRE-SWAT or SWAT-related*** & SWAT	15
None	20



*** Includes ALMANAC, ALMANACBF, APEX, EPIC, GLEAMS, SWRRB, & ROTO

Summary of Top 50 Cited Web of Science Trans. ASABE Papers (July 10, 2014)*

- Top-cited SWAT application or review papers
 - #s 1, 2, 7, 8, 9, 12, 13, 21, 27, 29, 32, 37
- Other papers with significant SWAT examples or discussions from 2006 TMDL special issue
 - #s 5, 6, 11
- APEX review paper – #38



*"B" was added for "Biological" in 2006 resulting in Trans. ASABE

Locations of Past and Future SWAT Conferences



2015 International SWAT Conference

- 18th International SWAT conference since 2001
- **65** participants in three SWAT Workshops
2-introductory (ArcSWAT and QSWAT), 1-advanced SWAT and an APEX introductory workshops were held concurrently at CRS4 June 22-23, 2015
- More than **194** Conference Participants:
 - Representing 39 countries
 - 6 continents
 - 48 poster presentations
 - 131 oral presentations

2015 International SWAT Conference

- CHANGE in Agenda
- Session D1: Soil and Watershed Modeling with Feras Ziadat, Thursday from 9:00-10:00, has been cancelled. In its place will be a special session on Global SWAT Modeling (Srini as moderator)

SWAT2012 model: ArcSWAT and QSWAT interface

- SWAT2012 is more robust than ever.
- New ArcSWAT for ArcGIS 10.1 and 10.2 were released for the SWAT 2012 with significant improvements
 - Working on one final release on arcgis 10.3 release soon, **THIS WILL BE THE LAST RELEASE on SWAT2012**
 - SWAT-CUP supports latest SWAT with much improved objective functions
 - QSWAT interface is complete with user manual, example datasets, enhanced output files processing in creating maps, animation, line/bar time series graph, and comparing with observed data.

Reaching out to increase worldwide SWAT Applications ...

- Global Weather generator database developed and integrated with ArcSWAT and available for download from <http://swat.tamu.edu>
- Worldwide gridded climatic databases (CFSR) from 1979 to 2010 at approximately 38km resolution for all climatic variables available for download from <http://globalweather.tamu.edu> (29,000 downloads; average of 900/month)

Reaching out to increase worldwide SWAT Applications ...

- Global Climate Change data CMIP 3 (CMIP 5 later) for 9 GCM models, 3 scenarios, 3 time periods, daily data available in ArcSWAT & QSWAT format download from <http://swat.tamu.edu>
- It is bias corrected and downscaled (Nature Conservancy and WB)
- (2500 downloads; average of 350/month)

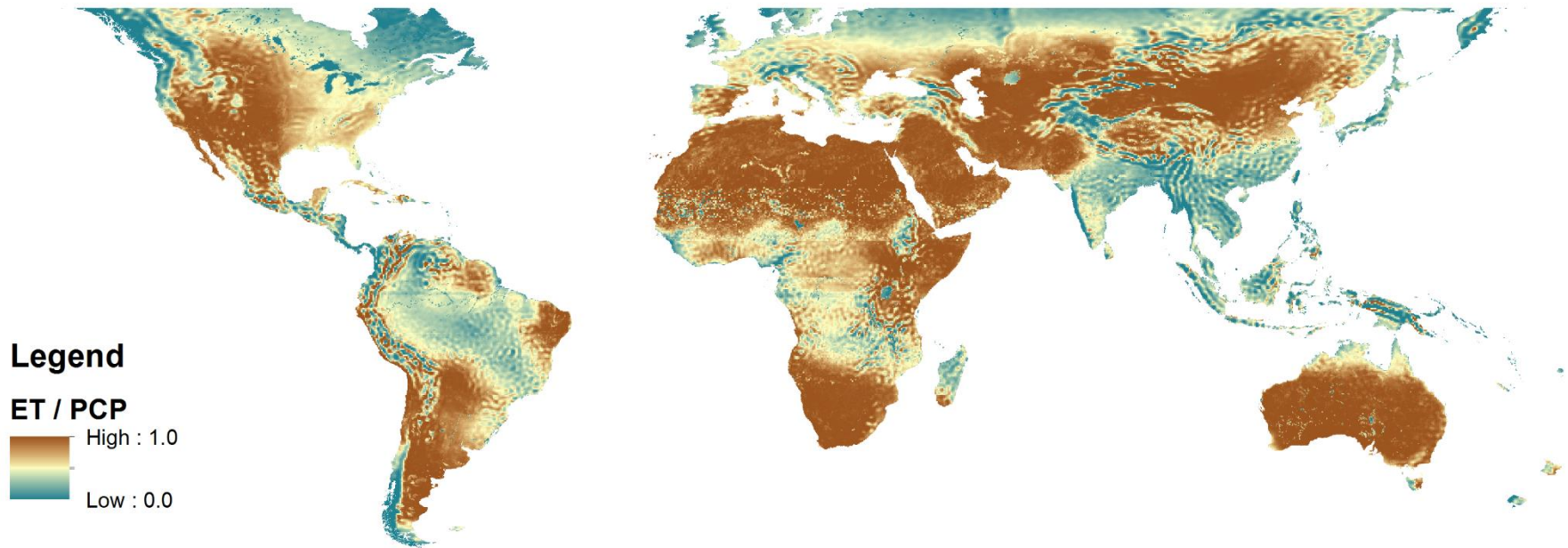
Future Tools.....

- Global Downscaled daily CMIP5 datasets with bias correction (8 different methods) tool will be available for all GCM models and scenarios (Henrik & Srini)
- Global SWAT model development (Jeff, Srini, Karim, Hendrik, Chris George, Peter Allan)
- Develop new Scenario tools at three user expertise level – Texas Team
- SWAT CPU-parallel processing
- SWAT in R-statistical package (Jerry Whittaker, USDA-ARS)
- SWAT-GPU parallel processing using graphical processor, than CPU processors, up to 2000 processor on a desktop (Srini, TAMU)

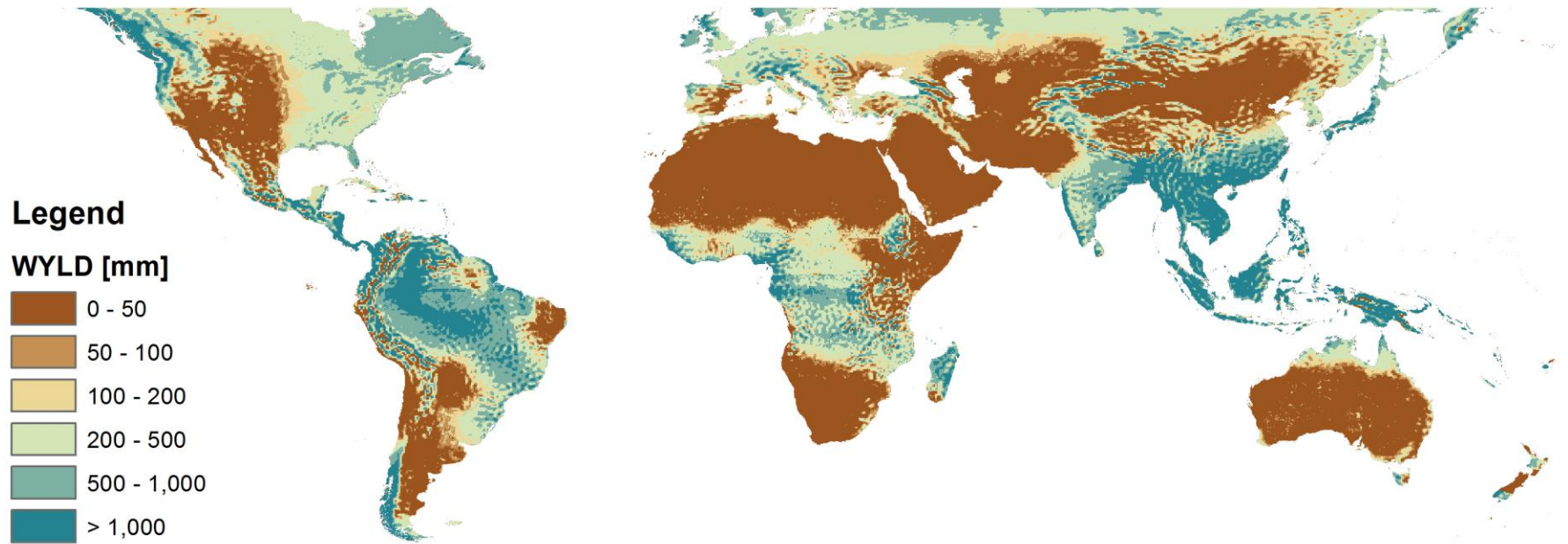
Global Model Subbasins (10km vs 1km)

Continent	Number of grid cells (10 km resolution) [*1,000]	Number of grid cells (1 km resolution) [*1,000,000]
Africa	367	37
Asia	463	46
Australia	103	10
Central America	33	3
Europe	233	23
North America	238	24
South America	223	22
Total	1,661	166

Ratio of ET/Precipitation



Water Yield (Blue Water)



SWAT - Sustainable land management Tool

Project 1 - SWAT Sustainable Land Management Tool (Release 0.0.1 Beta)

Home Conservation Practices Current Scenario: A

Project Scenarios

- Load / Create Models
- Define Baseline Model
 - Conservation Practices
 - Manage Scenarios
 - Assessment
 - Decision Support
 - Visualize
 - Model Outputs
 - Cost

- Select Conservation Practices to add for the current scenario
- Burn Operation
 - CheckDam
 - Contour Operation
 - Cover Crop
 - Fertilizer Management
 - Field Border
 - Filter Strip
 - Fire Operation
 - Generic Conservation Practice
 - Grade Stabilization
 - Grassed Waterways
 - Grazing
 - Irrigation Management
 - Pesticide Management
 - Pond
 - Residue Tillage Management
 - Stream Bank Stabilization
 - Street Sweeping Operation
 - Strip Cropping
 - Terracing Operation
 - TileDrainage Operation
 - Wetland

Filter Strips



Filter strips are land areas of either planted or indigenous vegetation situated between a potential, pollutant-source area and a water body that receives runoff

[Documentation](#)

Conservation practice parameters

File Type	Parameter Name	Value	Change Method	ArgumentType	Description
ops	MGT_OP	4	Absolute	Required	Management operation number
ops	IYEAR	1	Absolute	Required	Year operation takes place
ops	MONTH	1	Absolute	Required	Month operation takes place
ops	DAY	1	Absolute	Required	Day operation takes place
ops	FILTER_I	1	Absolute	Required	Flag for the simulation of filter strip
ops	FILTER_RATIO	40	Absolute	Required	Ratio of field area to filter strip

Save the Date!

- **2015 – Purdue University, USA (October 12-16)**
- **2015 – Tokyo, Japan (October 19-23)**
- **2016 – Beijing, China**
- **2017 – Warsaw, Poland**
- **2018 – Madras, India**
- **2019 – Brussels, Belgium**

THANK YOU

International Scientific Committee

- Karim Abbaspour
- Ann Van Griensven
- Jeff Arnold
- José María Bodoque del Pozo
- Indrajeet Chaubey
- Nicola Fohrer
- Philip Gassman
- A.K. Gosain
- Jaehak Jeong
- Allan Jones
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- Pedro Chambel Leitão
- Antonio Lo Porto
- José M. Sánchez-Pérez
- Mike White
- Fred F. Hattermann
- Xuesong Zhang
- Sabine Savage
- Balaji Narashimhan
- Tom Cochrane
- Pierluigi Cau
- Claire Baffaut
- Venkatesh Merwade
- Mikolaj Piniewski
- Suzana Gico Montenegro
- Eduardo Mario Mendiondo
- Jaroslaw Chormanski

A WORLD OF THANKS ...

Global SWAT Ambassadors

- Karim Abbaspour - Switzerland
- Peter Allen - USA
- Ann Van Griensven – Netherlands/Belgium
- Jeff Arnold - USA
- José María Bodoque del Pozo - Spain
- Jose Miguel Sanchez - France
- Nam-Won Kim – S. Korea
- Nicola Fohrer - Germany
- Philip Gassman - USA
- A.K. Gosain - India
- Allan Jones - USA
- Valentina Krysanova - Germany
- Antonio Lo Porto - Italy
- Manny Reyes - USA
- Kim Loi Nguyen - Vietnam
- Samran Sombatpanit - Thailand
- Michael Winchell – USA
- Balaji Narashimhan - India

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L'Europa alla portata della vostra impresa.

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