2014 International SWAT Conference

AWARDS

Young Scientist

- Dr. Nadia Bernardi Bonumá, Professor
- Universidade Federal de Santa Catarina: UFSC

Senior Scientist

- Dr. Martin Volk
- Helmholtz Centre for Environmental Research

Student/Post Doc of the Year

- Dr. Cibin Raj
- Purdue University, Indiana, USA

Most Cited Paper

- Dr. Daniel Moriasi
- USDA-ARS, El Reno, OK, USA

Best support of the year

- Dr. Karim Abbaspour
- EAWAG, ETH, Switzerland

2014 International SWAT Conference

Soil and Water Assessment Tool
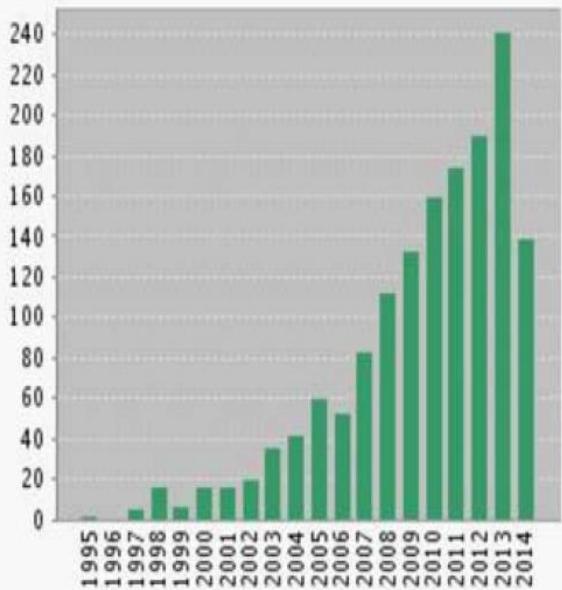### *Past, Present and Future*

R. Srinivasan

r-srinivasan@tamu.edu

Blackland Research and Extension Center & Ecosystem Science and Management

Texas A&M University

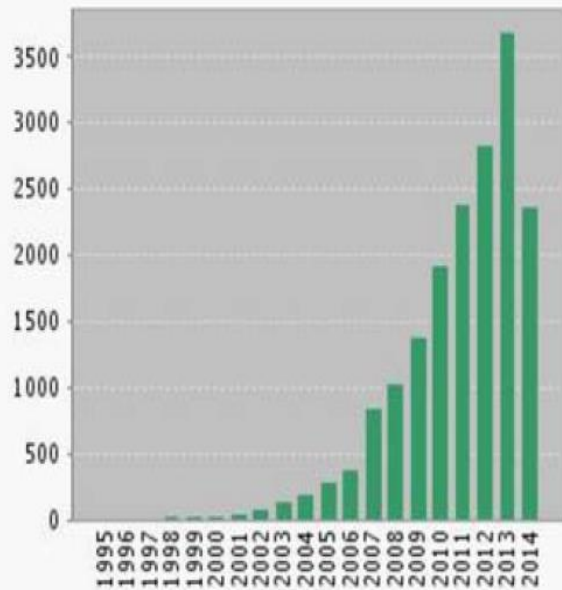*** Several slides were courtesy of Dr. Phil (the great adventurer)**

Historical Trends of Published SWAT-Related Peer-Reviewed Articles (1,511 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

Hydrological Processes 132

Transactions of the ASABE 108

Journal of Hydrology 93

Journal of the American Water Resources Association 88

Journal of Environmental Quality 47

Water Resources Management 43

Hydrology and Earth System Sciences 40

Journal of Soil and Water Conservation 39

Ecological Modelling 38

Journal of Hydrologic Engineering 37

Environmental Modelling & Software 36

Water Resources Research 36

Agricultural Water Management 34

Hydrological Sciences Journal 33

Transactions of the ASAE 32

Science of the Total Environment 23

Water Science and Technology 23

Physics and Chemistry of the Earth, Parts A/B/C 22

Advances in Geosciences 19

Journal of Environmental Management 19

International Agricultural Engineering Journal 13

Journal of Water Resources Planning and Management 13

Water International 13

Climatic Change 12

Environmental Management 12

Environmental Modeling and Assessment 11

Journal of Environmental Monitoring 11

Advances in Water Resources 10

Environmental Earth Sciences 10

Journal of Water Resource and Protection 10

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

Languages Represented in SWAT Literature Database

Category	Total papers	Category	Total papers
English	1614	Indonesian	4
Chinese	35	German	3
Portuguese	15	Spanish & English	3
Korean	8	Basque	1
Spanish	6	Polish	1
Farsi	4	Romanian	1
French	4	Vietnamese	1

Web of Science All-Time Top-Cited SWAT-related JAWRA Papers (July 14, 2014)

Authors	Year	Title	Model	Citations All Databases	Core Collection
Arnold et al. (#1)	1998	Large Area Hydrologic Modeling and assessment - Part 1: Model Development	SWAT	1,423 (GS: 2,711)	1,291
Santhi et al. (#2)	2001	Validation of the SWAT Model on a Large River Basin with Point and Nonpoint Sources	SWAT	353	341
Arnold et al. (#4)	1999	Automated Methods for Estimating Baseflow and Ground Water Recharge from Streamflow Records	-	277	248
Srinivasan et al. (#11)	1998	Large Area Hydrologic Modeling and assessment - Part II: Model Application	SWAT	149	138

JSWC Article Describing Bibliometric Review of Nonpoint Source Modeling Research

- Citation: Li, S., Y. Zhuang, L. Zhang, Y. Du, and H. Liu. Worldwide performance and trends in nonpoint source pollution modeling research from 1994 to 2013: A review based on bibliometrics. Journal of Soil and Water Conservation 69(4): 121A-126A.

- Both authors of studies and terms in studies are ranked in JSWC article based on review of articles in Web of Science Core Collection
  - searched on terms in article titles, abstracts or keywords
  - SWAT: #4 key term and most widely used model
  - EPIC: Also a key term; declining influence in last decade

- Five indices used to rank authors
  - **total articles**, first or correspondence author, **total citations**, citations per publication, & author h-index based articles included in the analysis
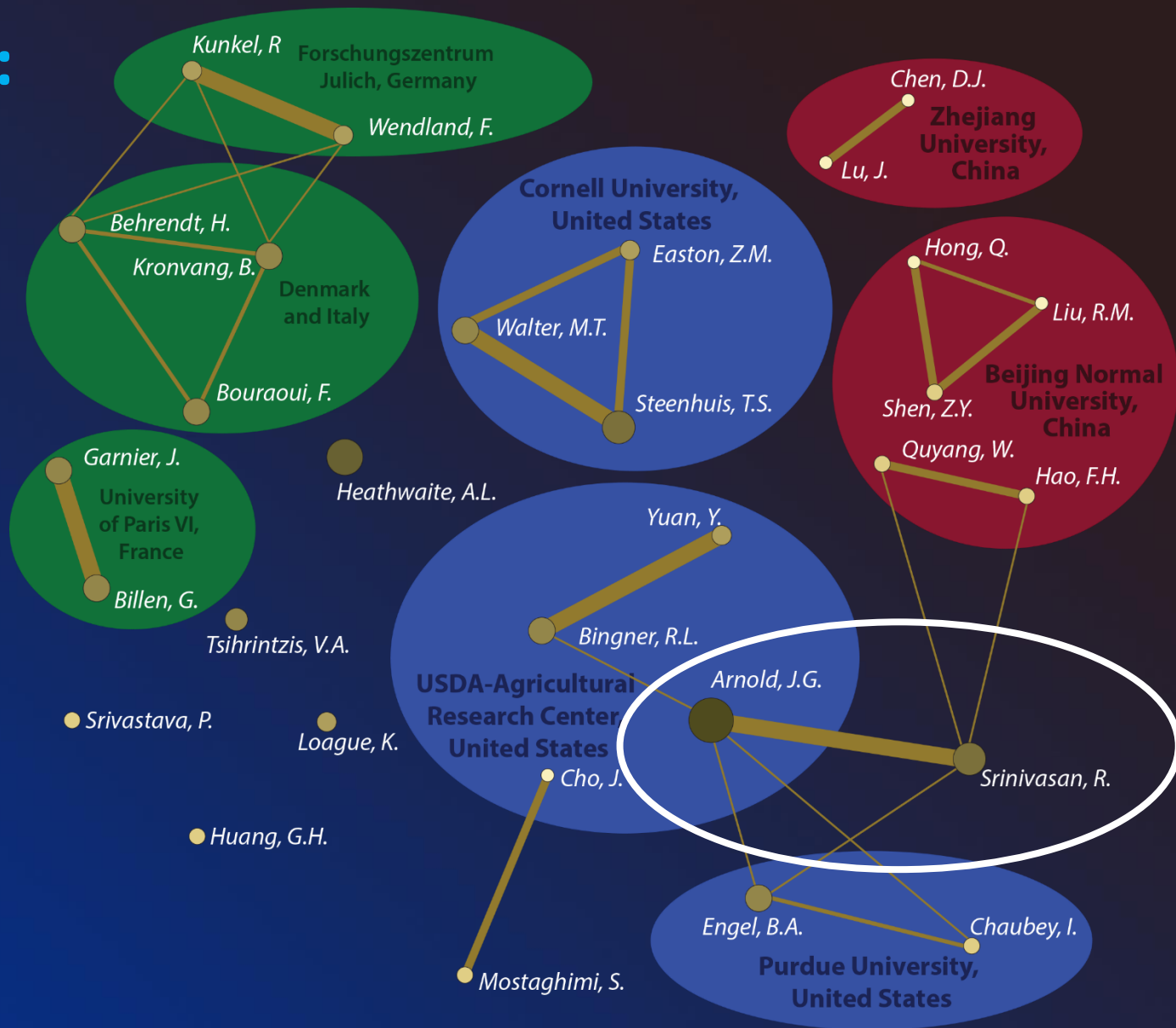
CARD

Influential "SWAT Authors" Among 30 Top Water Quality Modeling Authors in JSWC Article

Rank	Author	Institution	Total Articles	Total Citations
1	J.G. Arnold	USDA-ARS	30	2415
2	R. Srinivasan	Texas A&M Univ.	27	2097
3	T.S. Steenhuis	Cornell Univ.	22	486
5	M.T. Walter	Cornell Univ.	20	399
14	F. Bouraoui	Comm. of European Communities	15	379
19	F.H. Hao	Beijing Normal Univ.	13	194
20	I. Chaubey	Purdue Univ.	12	238
21	Z.M. Easton	Virginia Tech Univ. (Cornell Univ.)	12	169
22	W. Ouyang	Beijing Normal Univ.	11	90

JSWC Article: Cooperation Among Authors

Locations of Past and Future SWAT Conferences

Delft
Warsaw
Zürich
Giessen
Toulouse
Bari
Toledo
Cagliari
Beijing
Seoul
New Delhi
Chiang Mai
Ho Chi Minh City
Bogor
Boulder
Recife

- Past SWAT conferences
- Future SWAT conferences

CARD

2014 International SWAT Conference

- 17th International SWAT conference since 2001
- **75** participants in three SWAT Workshops 2-introductory (English and Portuguese) and 1-advanced held concurrently at ITEP and UFPE, Recife on July 28-29, 2014
- More than **150** Conference Participants:
  - Representing 24 countries
  - 6 continents
  - 28 poster presentations
  - 90 oral presentations

SWAT2012 model and ArcSWAT interface released

- SWAT2012 is more robust than ever.
- New ArcSWAT for ArcGIS 10.1 and 10.2 were released for the SWAT 2012 with significant improvements
  - Weather processing is improved
  - Improved database management & update databases and swat write input functions
  - SWAT-CUP supports latest SWAT with much improved objective functions
  - SWAT_Check is now integrated within the ArcSWAT
  - Enhanced output files processing into the database and able to animate SWAT output variables using ArcGIS 10

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 (16,000 download over 15 months period)

Reaching out to increase worldwide SWAT Applications ...

- Published **Spanish Manuals** – theory and user input/output manuals *(Allan Jones and WB)*
- Published **Chinese Theory Manual** *(Dr. Xuesong Zhang)*
- **Spanish Tutorial** – using ArcSWAT *(Natalia Uribe Rivera, CIAT – Columbia)*

SWAT Tutorial Videos

SWAT instructional videos
Learning to use the Soil and Water Assessment Tool

Introduction
1. Introduction to SWAT and the Instructional Videos

Downloading and Setting Up ArcSWAT
2. Download and Install ArcSWAT
3. Folders and Files

Running the Lake Fork Example
4. Getting Started - Set up the initial project
5. Watershed Delineation
6. HRU Analysis
   - Overview and Land Use Definition
   - Soil and Slope Definition
   - HRU Overlay
7. Weather Data Input
8. Writing and Editing Input Files
9. The SWAT Model Simulation
10. SWAT Output Files

Running and Evaluating SWAT in Your Watershed
11. Obtaining elevation, land use, and soil data for your watershed
12. Obtaining weather data from theNational Climatic Data Center
13. Importing your weather data into SWAT
14. Modifying SWAT inputs - HRU

About these Videos

These videos were created by Purdue University, in collaboration with Texas A & M, with funding from U.S. EPA.

Other Resources for Learning to Use SWAT

Offical SWAT Website

Instructional workshops

Conferences

User Groups

Comments   or Suggestions?

Please share your suggestions or experiences using the videos in our   online survey

developed by: **Dr. Jane Frankenberger**, *Purdue University*
funded by: U.S. EPA

Future Tools…..

- Global Downscaled daily CMIP 3 & 5 datasets with bias correction will be available for all GCM models and scenarios (Henrik, Srini)
- 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)

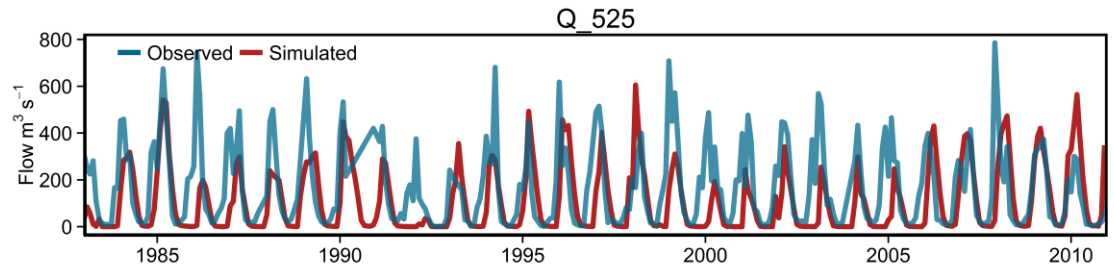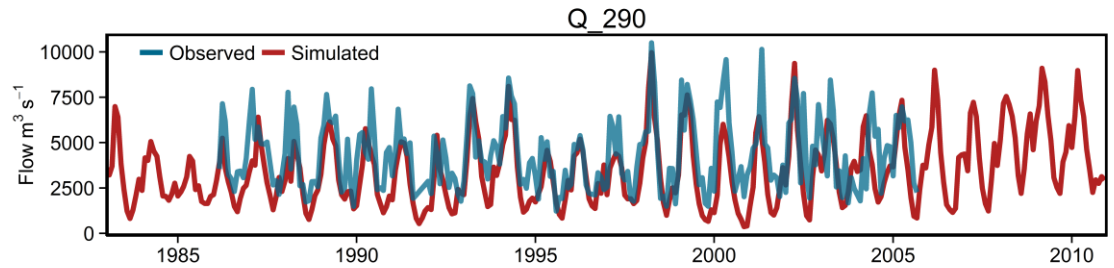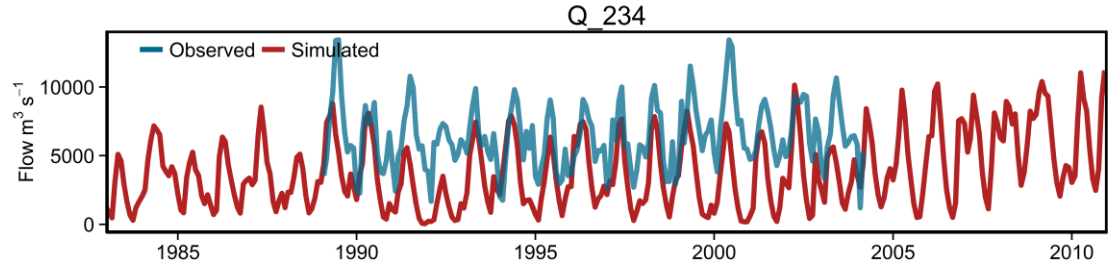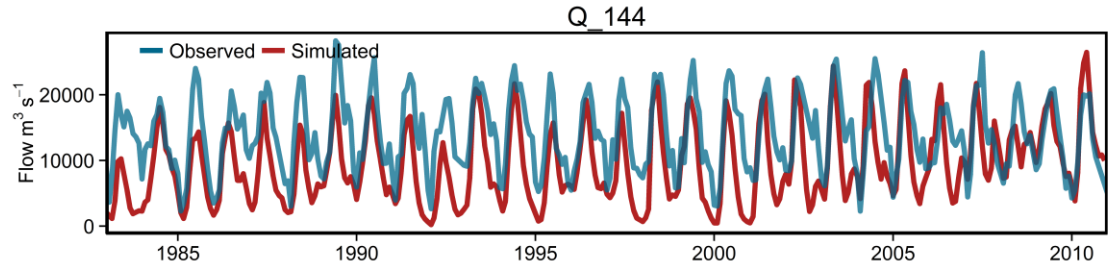# Preparing for the Amazon Basin & for the entire Brazil

Input Data
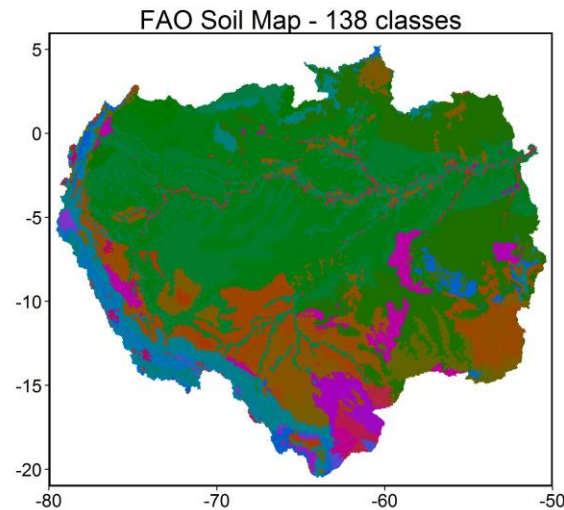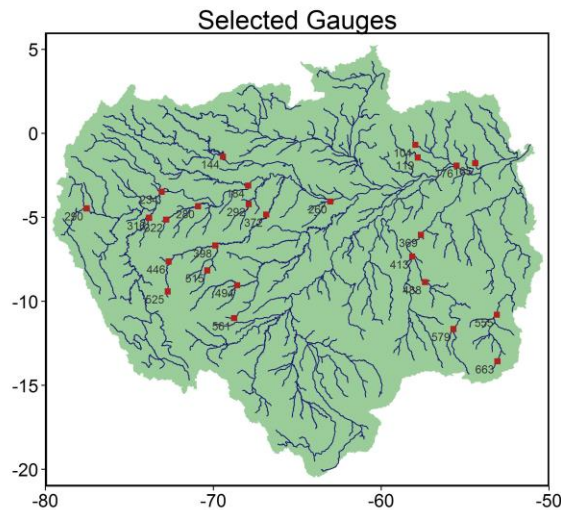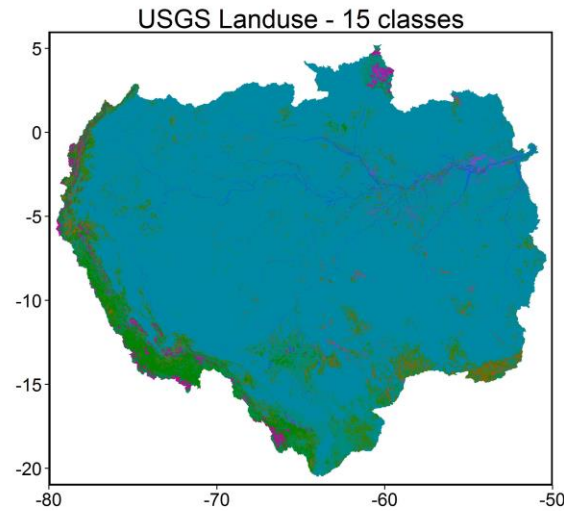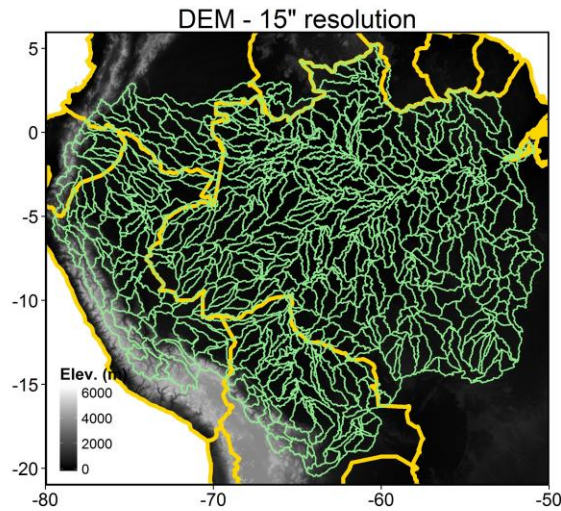
Analyzing Precipitation and Evapotranspiration

J.A.F. Monteiro, B. Gücker, K. Abbaspour, R. Srinivasan
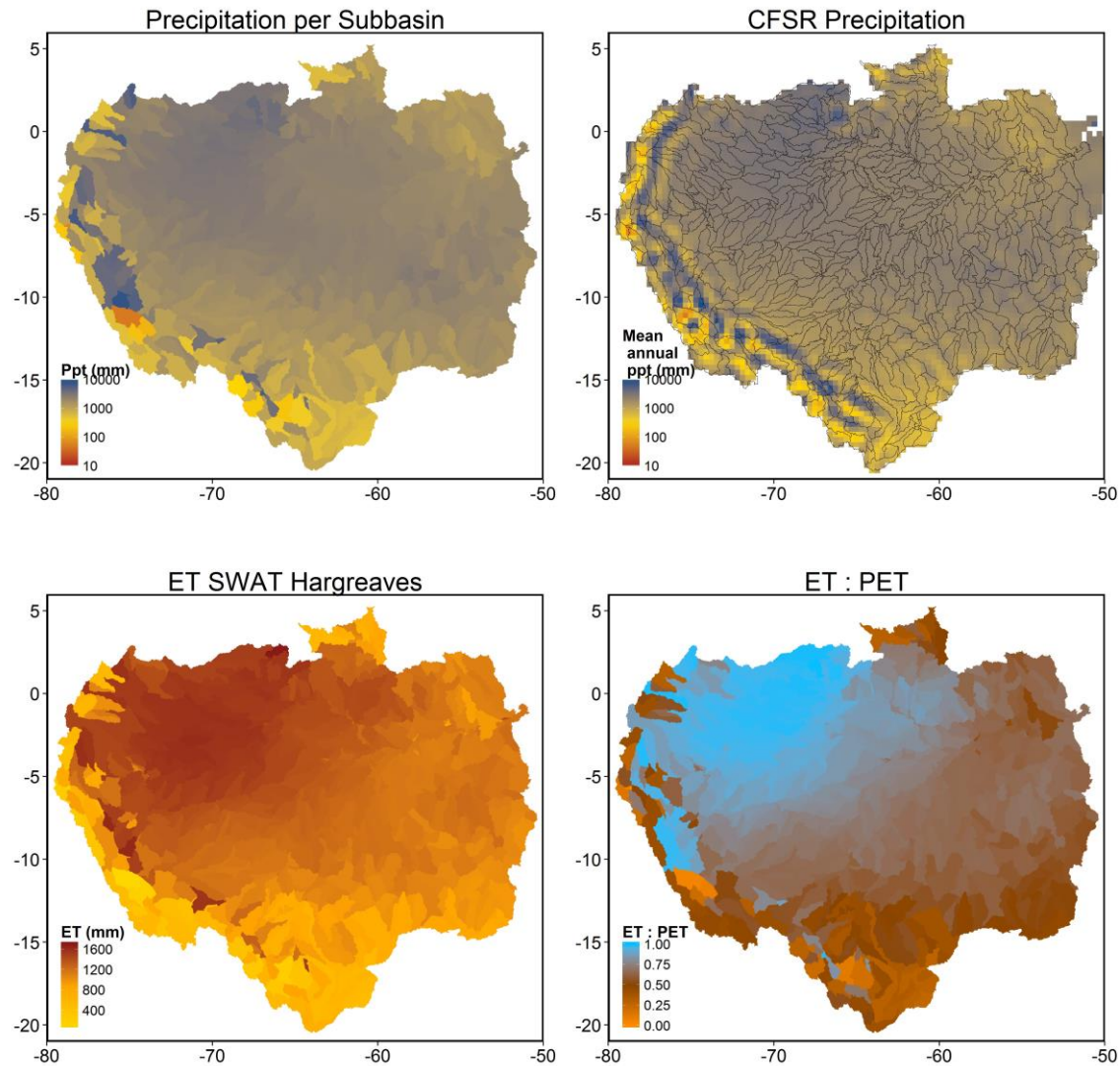
Headwater Gauges
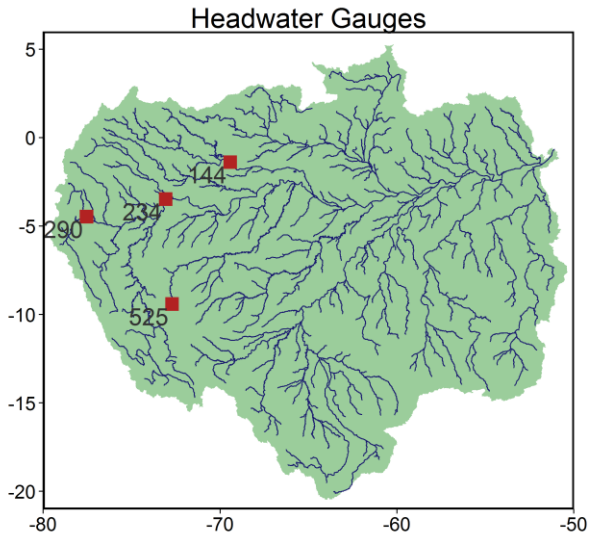
Save the Date!

- **2015 –** Sardinia, Italy (Pierluigi Cau)
- **2017 –** Warsaw, Poland

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
- Valentina Krysanova
- Pedro Chambel Leitão
- Antonio Lo Porto
- José M. Sánchez-Pérez

- R. Srinivasan
- Martin Volk
- Mike White
- Fred F. Hattermann
- Sue White (Late)
- Xuesong Zhang
- Sabine Savage
- Balaji Narashimhan
- Tom Cochrane
- Pierluigi Cau
- Claire Baffaut
- Debjani Deb

A WORLD OF THANKS ...
Global SWAT Ambassadors

- Karim Abbaspour - Switzerland
- Peter Allen - USA
- Ann Van Griensven - Netherlands
- 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

Sincere THANKS to

- Suzana Montenegro, UFPE – Recife, BR
- Josiclêda Galvíncio, UFPE – Recife, BR
- Betânia Freire, UFRPE – Recife, BR
- Nadia B. Bonumá, UFSC – Florianópolis, BR
- Ênio França, UFRPE – Recife, BR
- André Julio do Amaral, EMBRAPA Solos - Recife, BR
- José Guimarães Carvalho Neto, UFPE - Recife, BR
- José Yure Gomes dos Santos, UFOB - Barreiras, BR
- Abelardo Montenegro, UFRPE – Recife, BR
- Josimar G. Fernandes, IPA /UFPE – Recife, BR
- Danielle de Almeida Bressiani, USP – São Carlos, BR

And all the volunteers and students.
Jaclyn Tech, Texas AgriLIFE Research

Thanks to our Sponsors