GAME-T Database: How it should be used?

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(น้ำพุ) ญี่ปุ่น

Contents

- What is GAME-T DB?
  - What GAME-T DB Contains?
  - How it was Made?
  - What are Characteristics?
  - How to Access GAME-T DB
- Example of Its Application

What is GAME-T DB?

- Data Archive of GAME-T
  - Intensive GAME-T Observation (Flux etc.)
  - “Routine” Observation
  - Remote Sensing
  - Other Supportive Data

- Document Archive of GAME-T
  - Project History Record
  - Presentation Material
  - Documents
- (And in Future...)

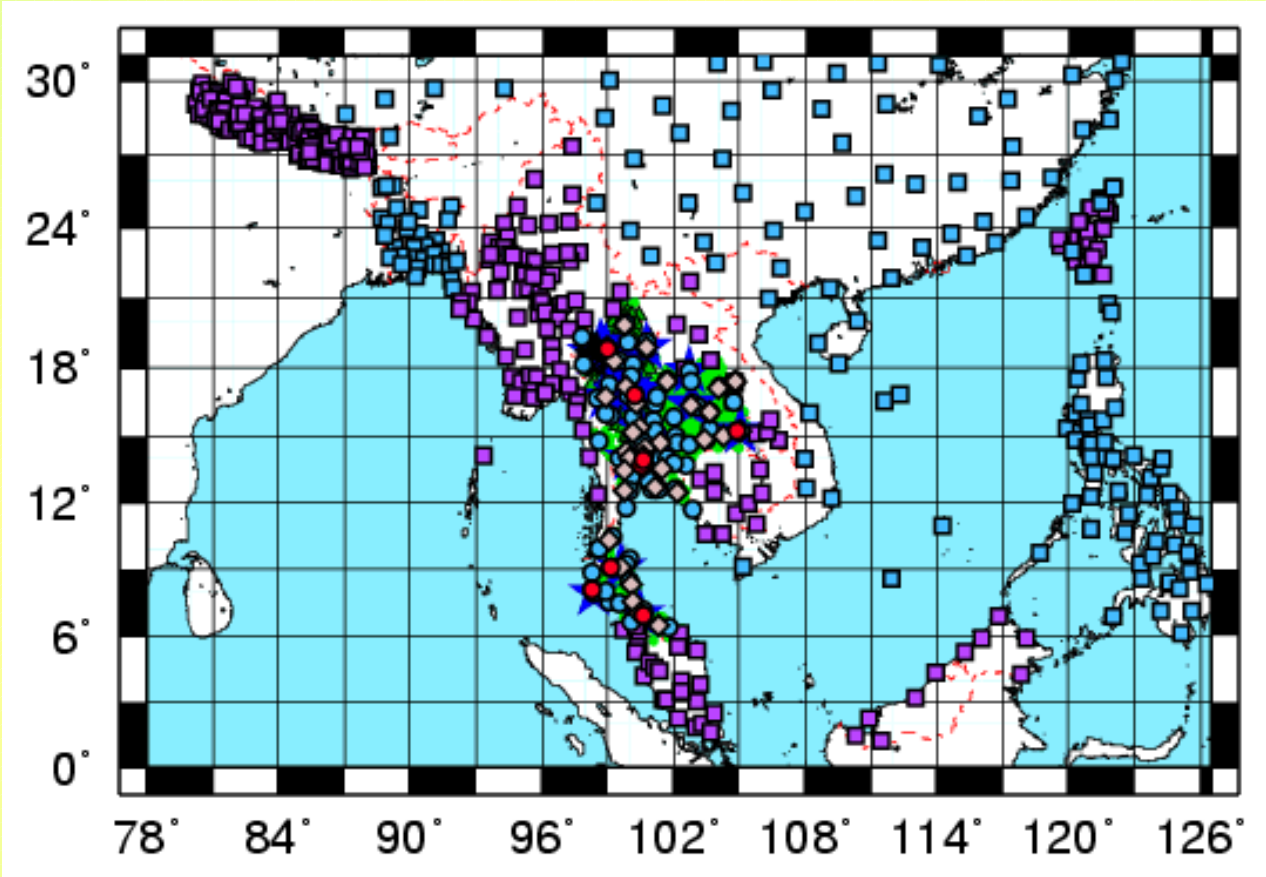
What GAME-T DB contains?

- [1]Field Observations done by GAME-T Researchers→

- Ground Measurements:
  - Flux / Radiation / Rainfall etc.
- Upper Air Observations
  - Sonde / Lidar / Wind Profiler / GPS etc.

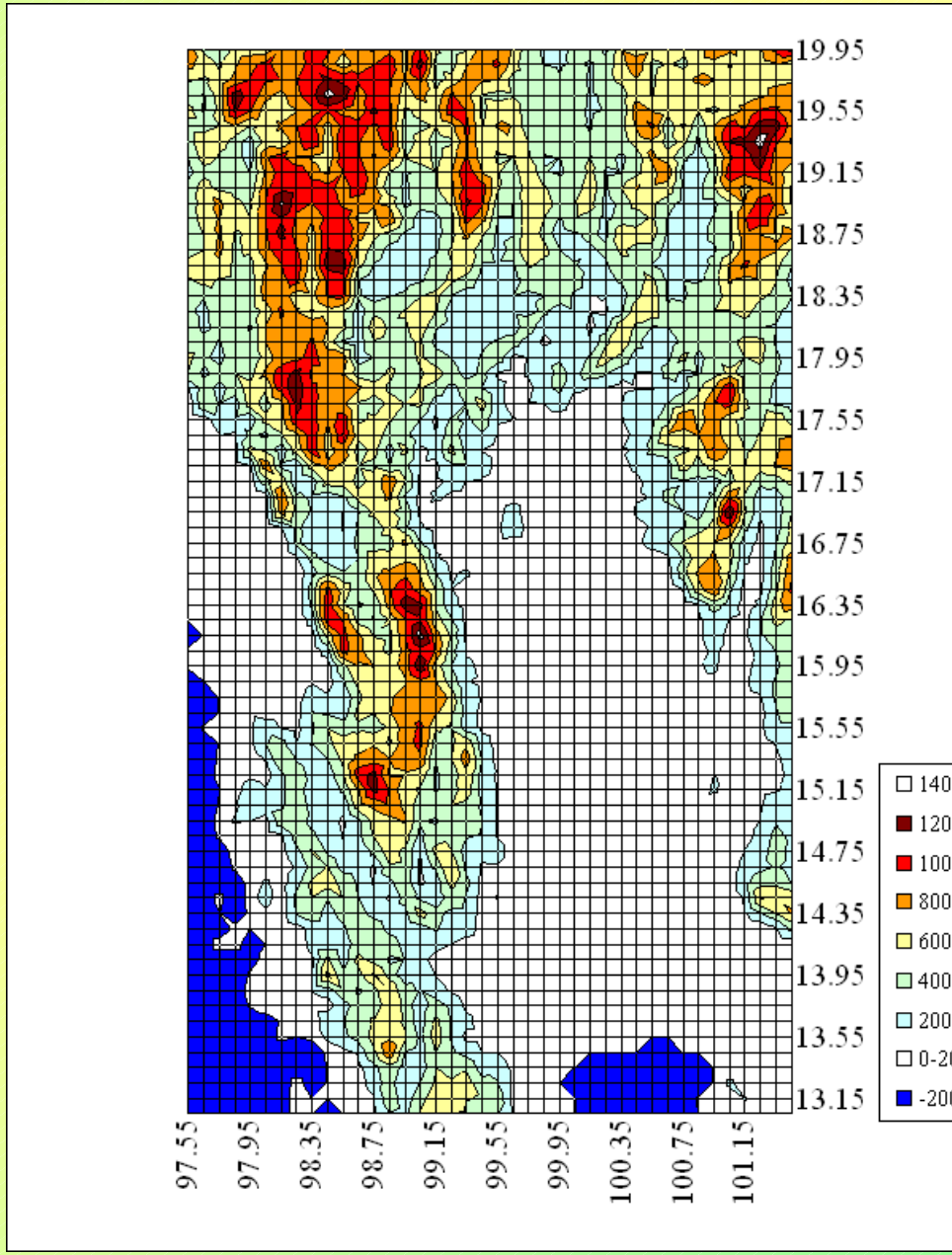
What GAME-T DB contains?

- [2]Routine Observations
  - Weather / River discharge etc.
  - By various countries in SE Asia, >1000 sites



Other Data for Supporting Research

- **Ex. 0.1deg DEM of ChaoPhraya River, Thailand**



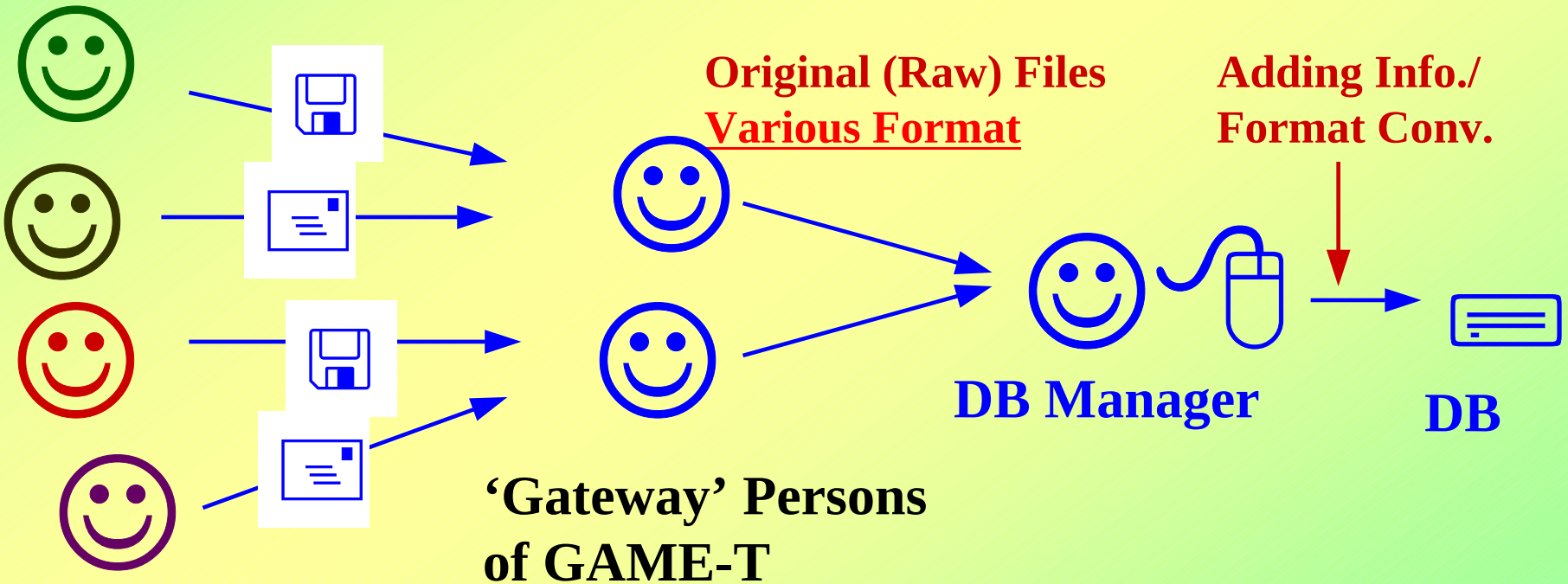
How GAME-T DB was made?

- **Data Providers sent files to us in various media**
  - **More than 100 FD, CD-R, ZIP, MO, DVD-R, DLT...**
  - **On-line publication**
  - **E-mail attached**

•GAME-T Member can view contents of each disk (Password Needed)

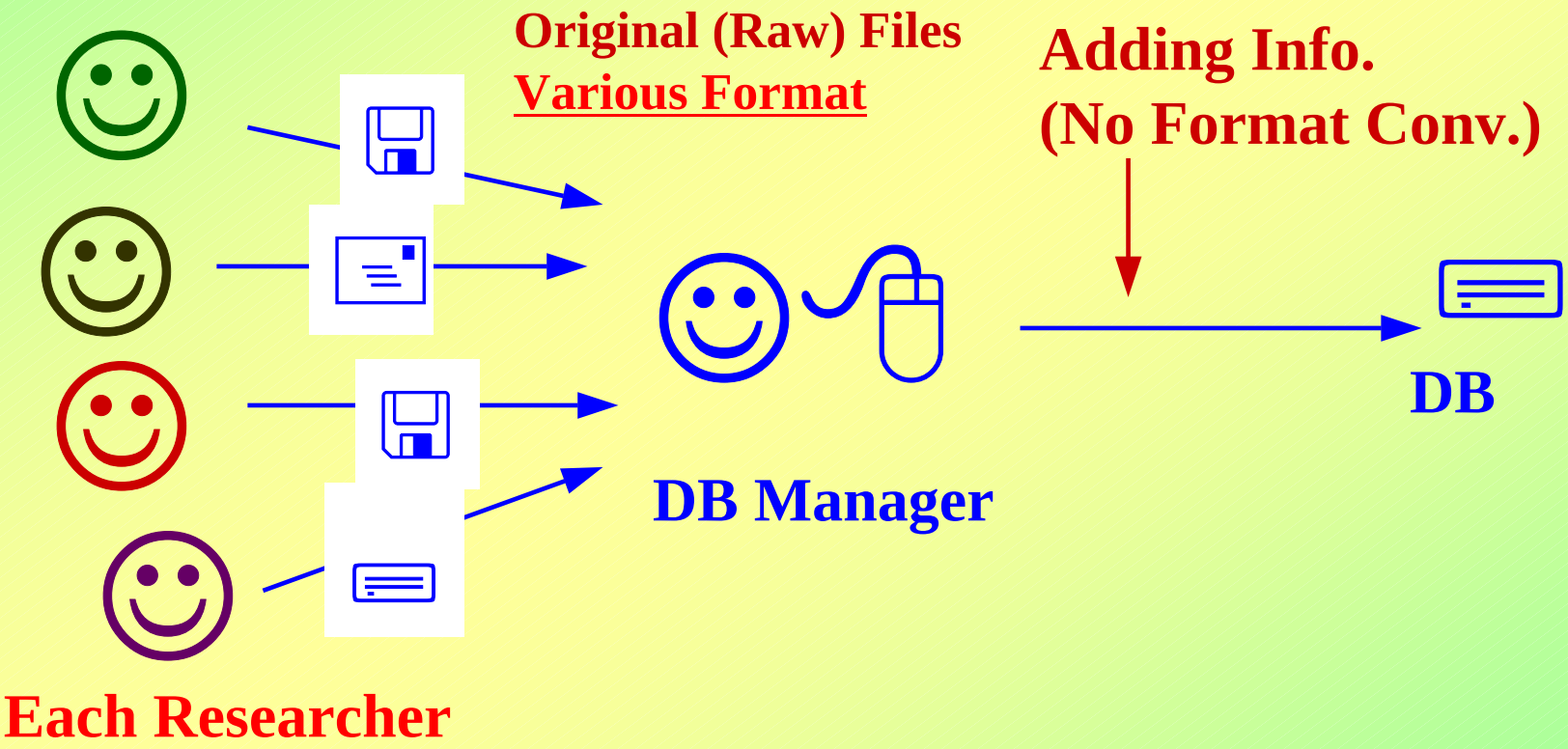
[1] Routine Obs. Data: International Collaboration

- ‘3 tier’ system



How Datasets are being collected? [2] Intensive (GAME-T) Obs.

- **Researchers send files to DB manager**



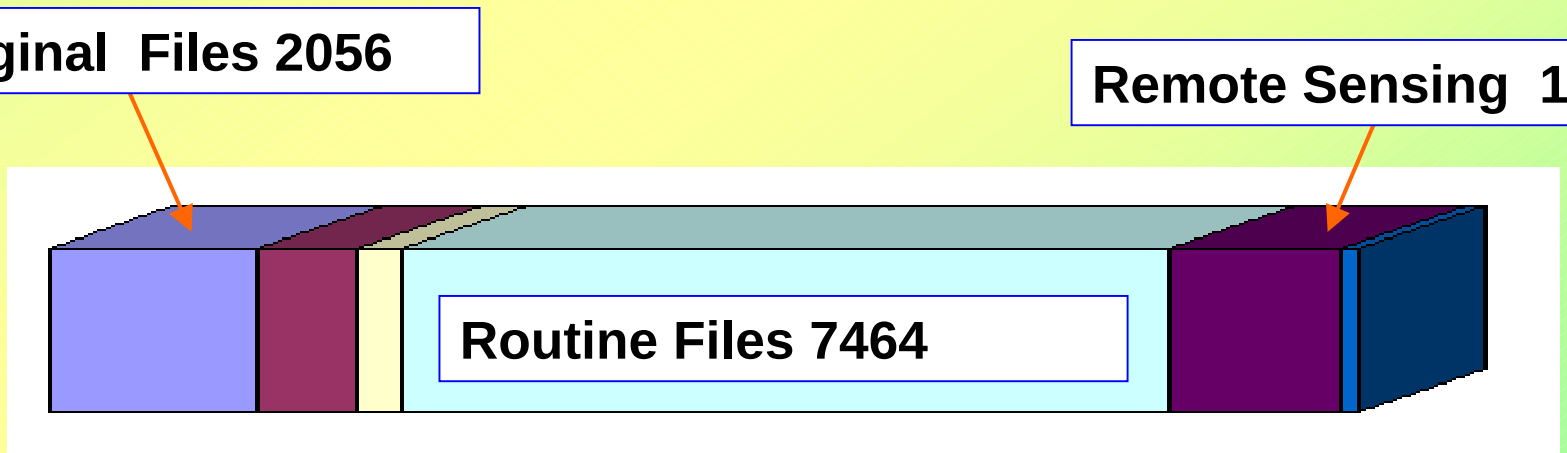
What are Characteristics?

- **[Contents] Richness in**
  not only
  measurements by researchers
  but also
  routine (operational) observation
  by official agencies
  from various countries

- **[User Interface] User-friendly HTML files**

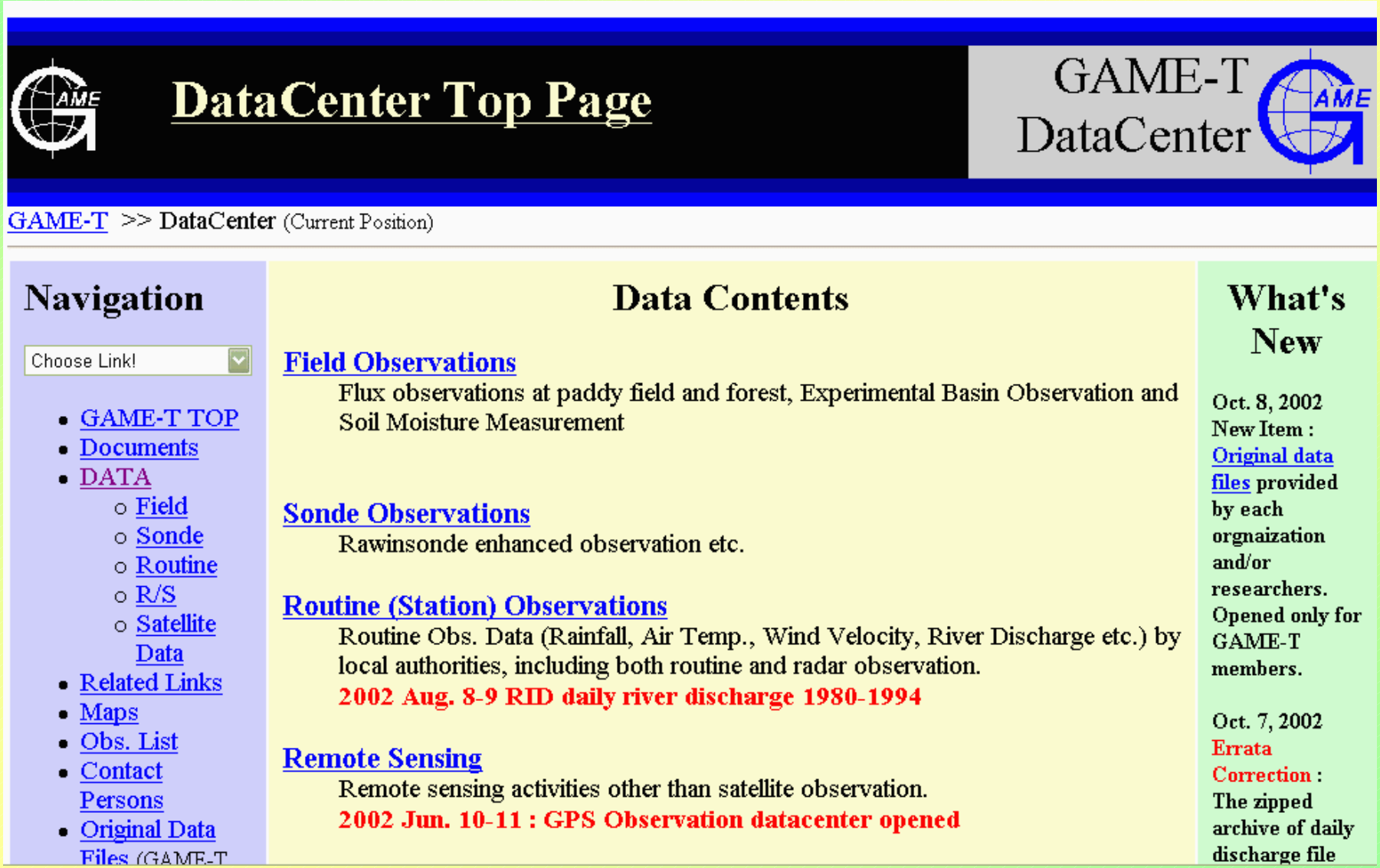
Number of Files

- **7464 of 12790 files are routine observation files.**



Total : 12790

How to access GAME-T DB



Top Page Image (→DEMO)

WWW Access

- **Two WWW Servers (same contents)**
  - **Univ. of Tokyo, Japan**
    `http://hydro.iis.u-tokyo.ac.jp/GAME-T/`
  - **NRCT, Bangkok, Thailand**
    `http://game-t.nrct.go.th/`
- **Want to know Password?**
  - **Contact `agata@iis.u-tokyo.ac.jp`**

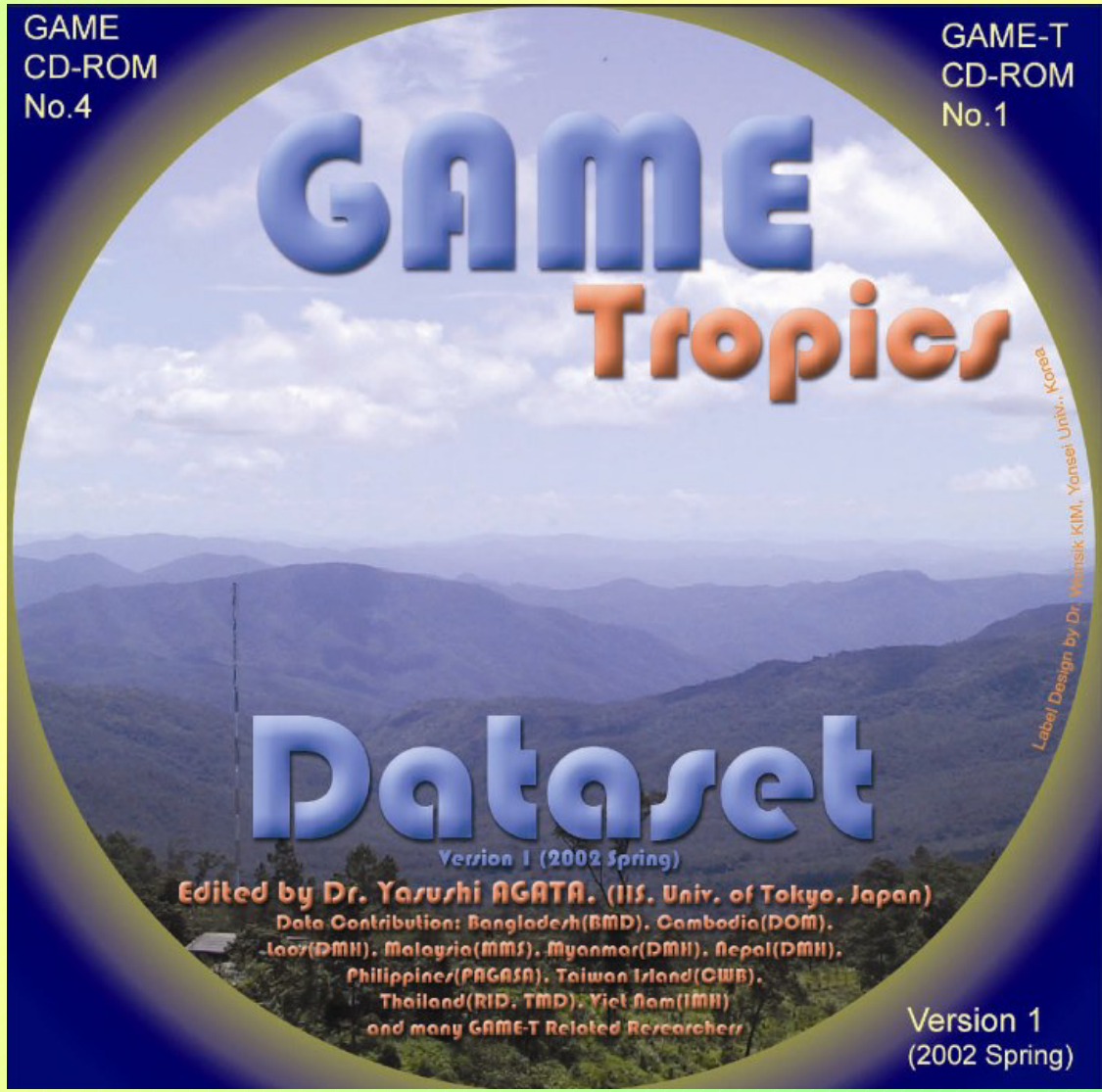
Server in NRCT

- **A DB Server was installed in NRCT, Thailand**
  - **Maintained by NRCT's staff. Thank you!**

http://game-t.nrct.go.th/

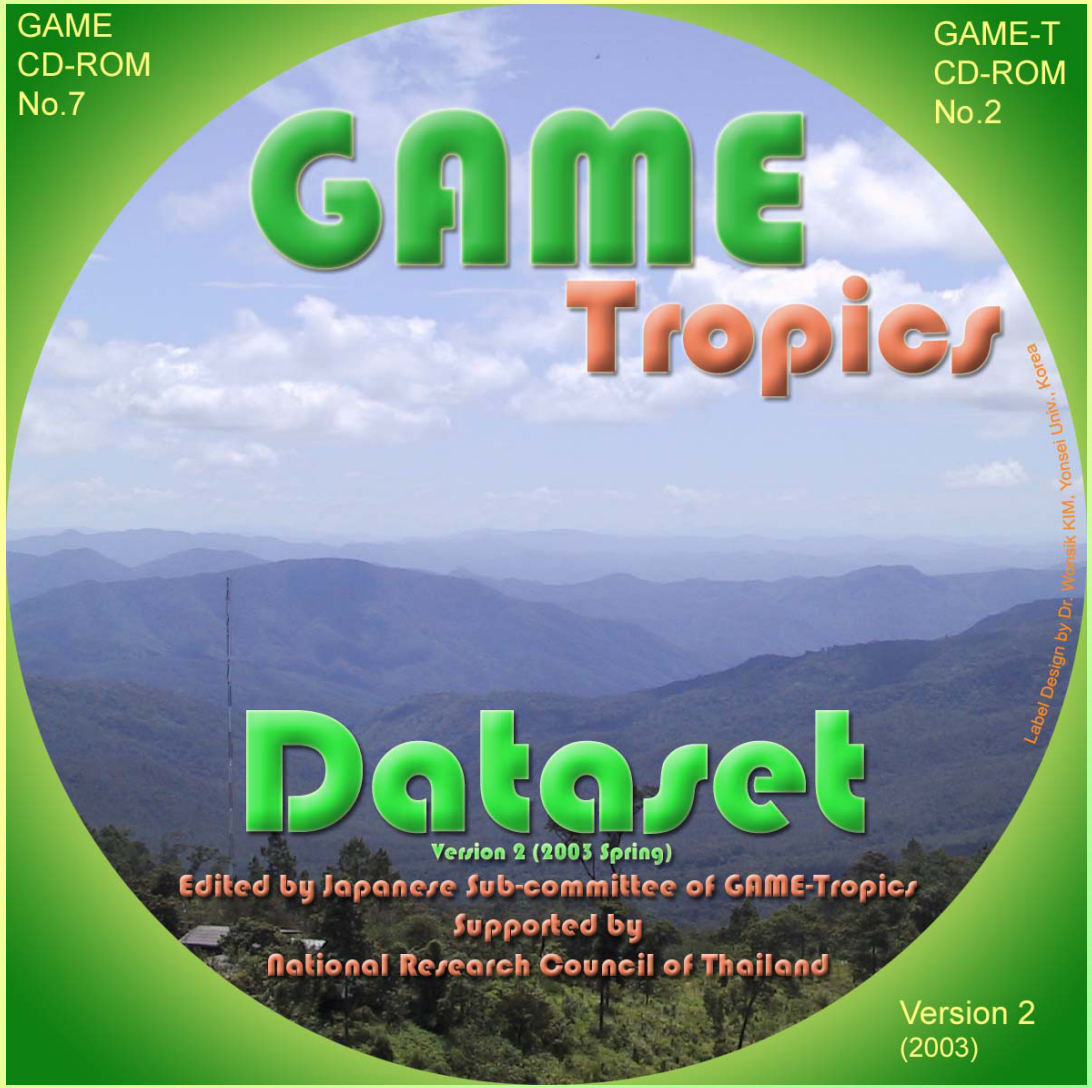
CD-ROM

- **CD-ROM Version1**
  - **Data for 1998**
  - **Contains more then 8000 files (620MB)**
  - **500 Copies Pressed**
  - **>490 Distributed**



CD-ROM Ver. 2 in Press!

- **CD-ROM Version2 (planned)**
  - **2 CD-ROMs**
  - **Data for 1997-2002**
    - **GAME-2 Official Data collection period**
  - **More Flux/Sonde Observations**
  - **Available in this autumn**

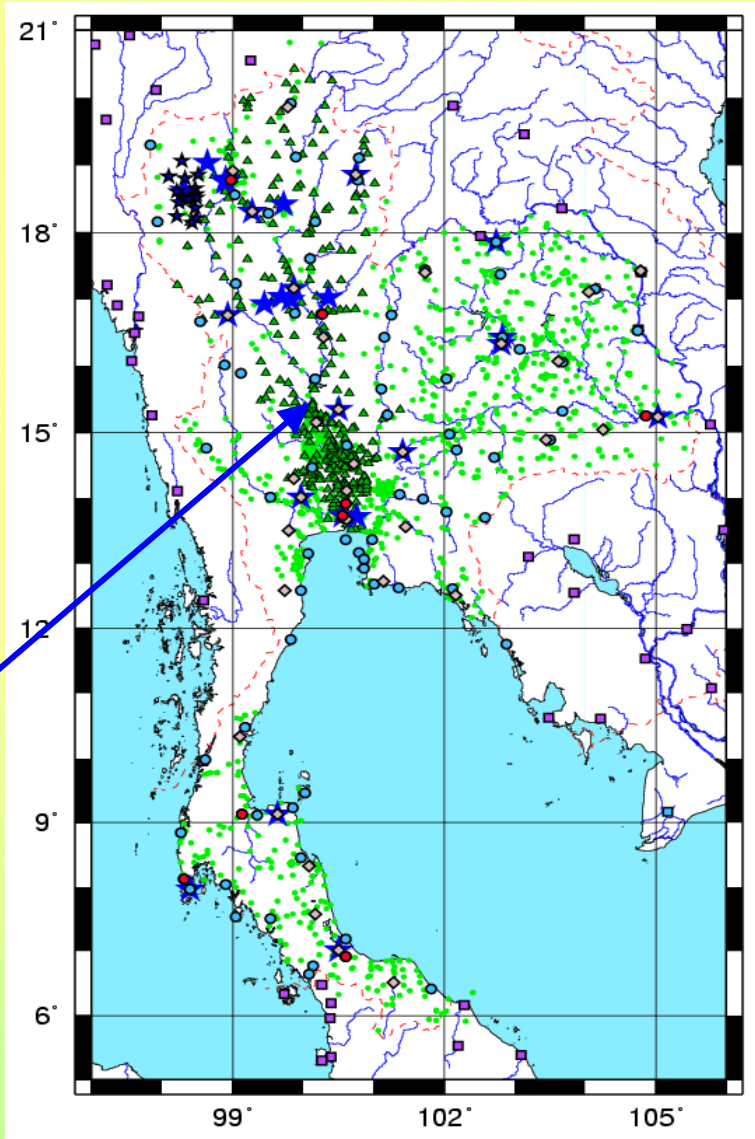


To the Next Step

- **Data Collection Phase**
  - **Done!**
- **Data Publication Phase**
  - **Done/Doing!**
- **Utilization Phase**
  - **The next step!**
  - **For What?**
    - **Research / WR Management**

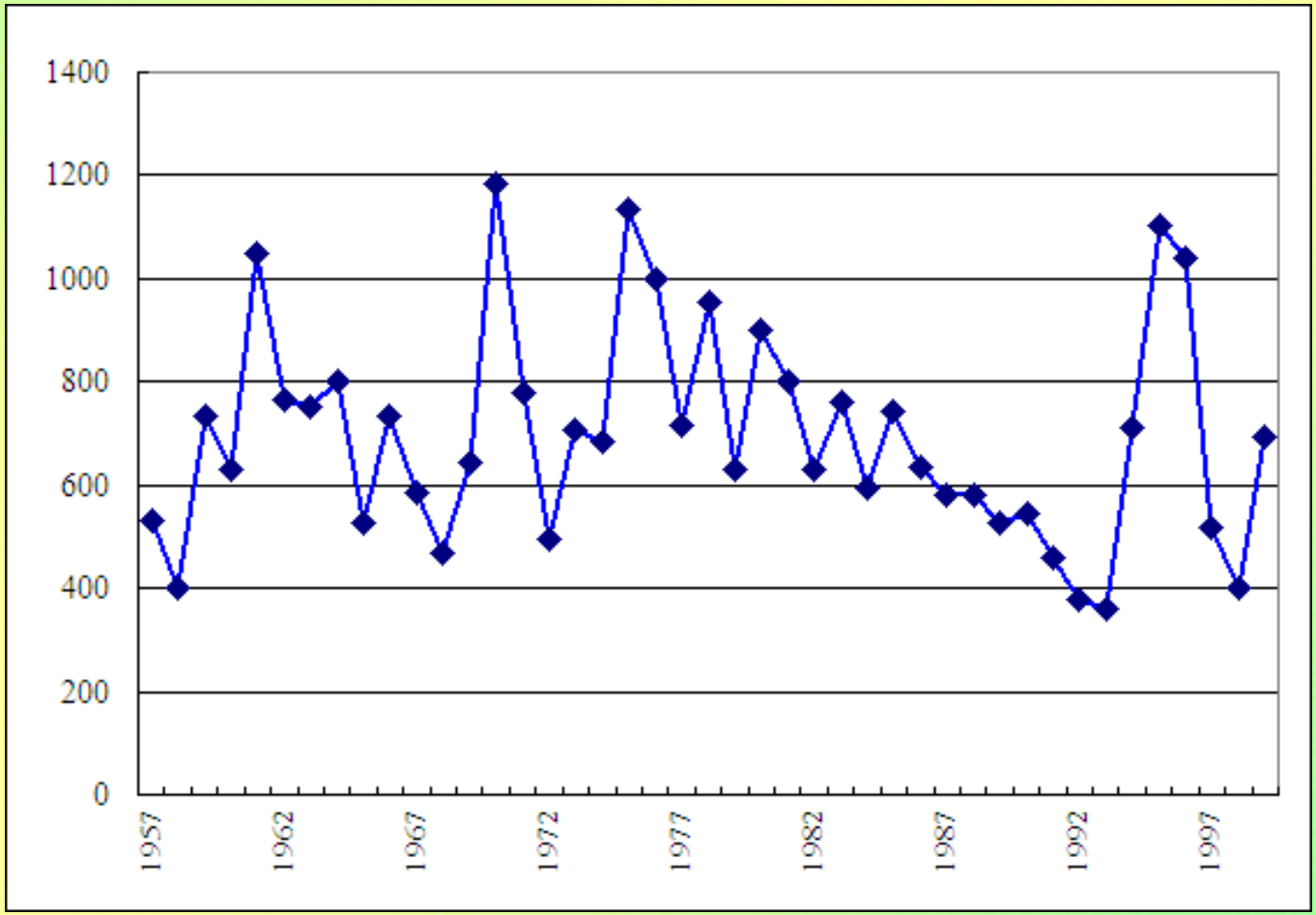
Ex. Research:

- **Kanae (2001) : Obvious Decrease in September Rain in these decades in Thailand**
- **How about September Discharge?**
- **“C.2” Location (Nakhon Sawan), ChaoPhraya Riv., Thailand**



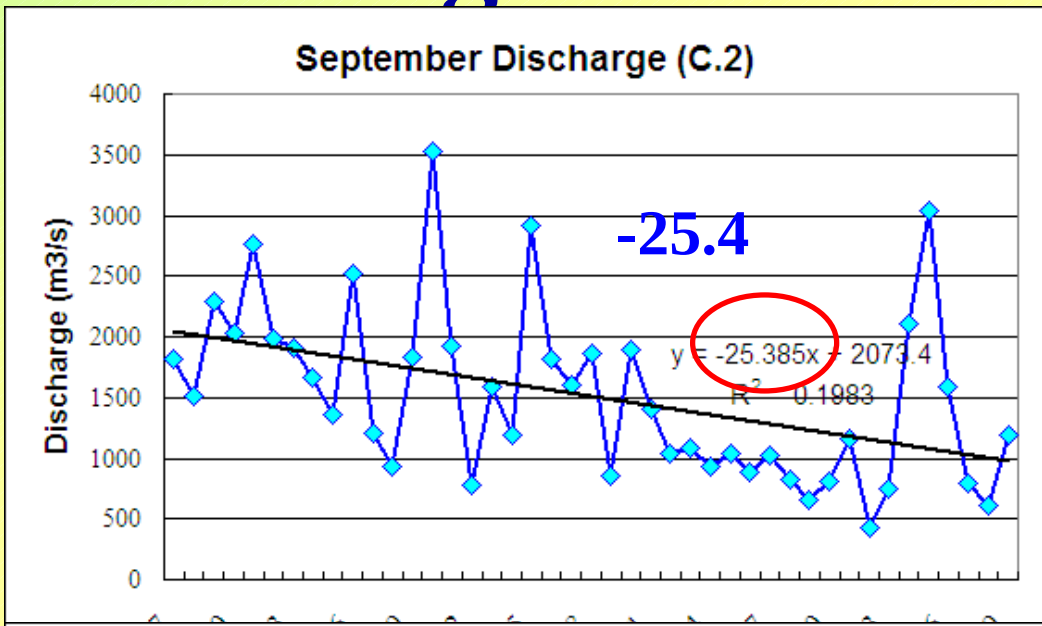
Trend in Annual Discharge:

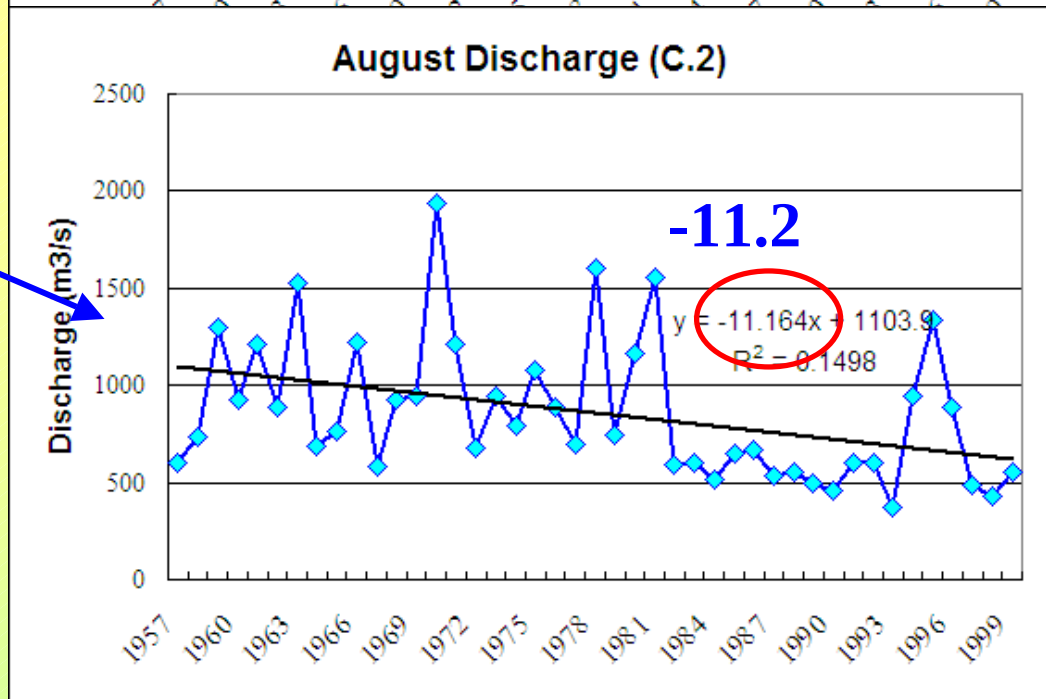
- **Decrease in C.2 Annual Discharge esp. 1980's**



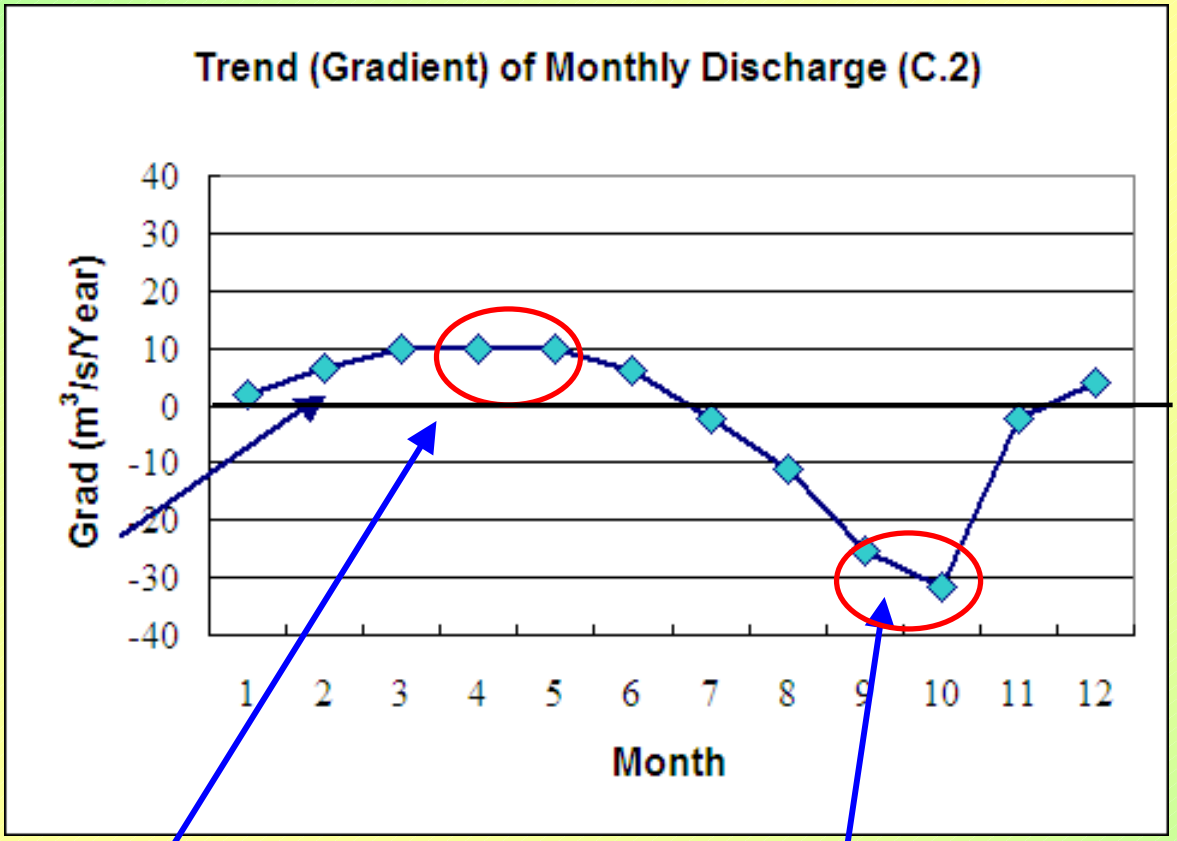
Trend in Discharge:

- Decrease in September Discharge
- But August Discharge Also Decreases
- Grad. Of Regression?



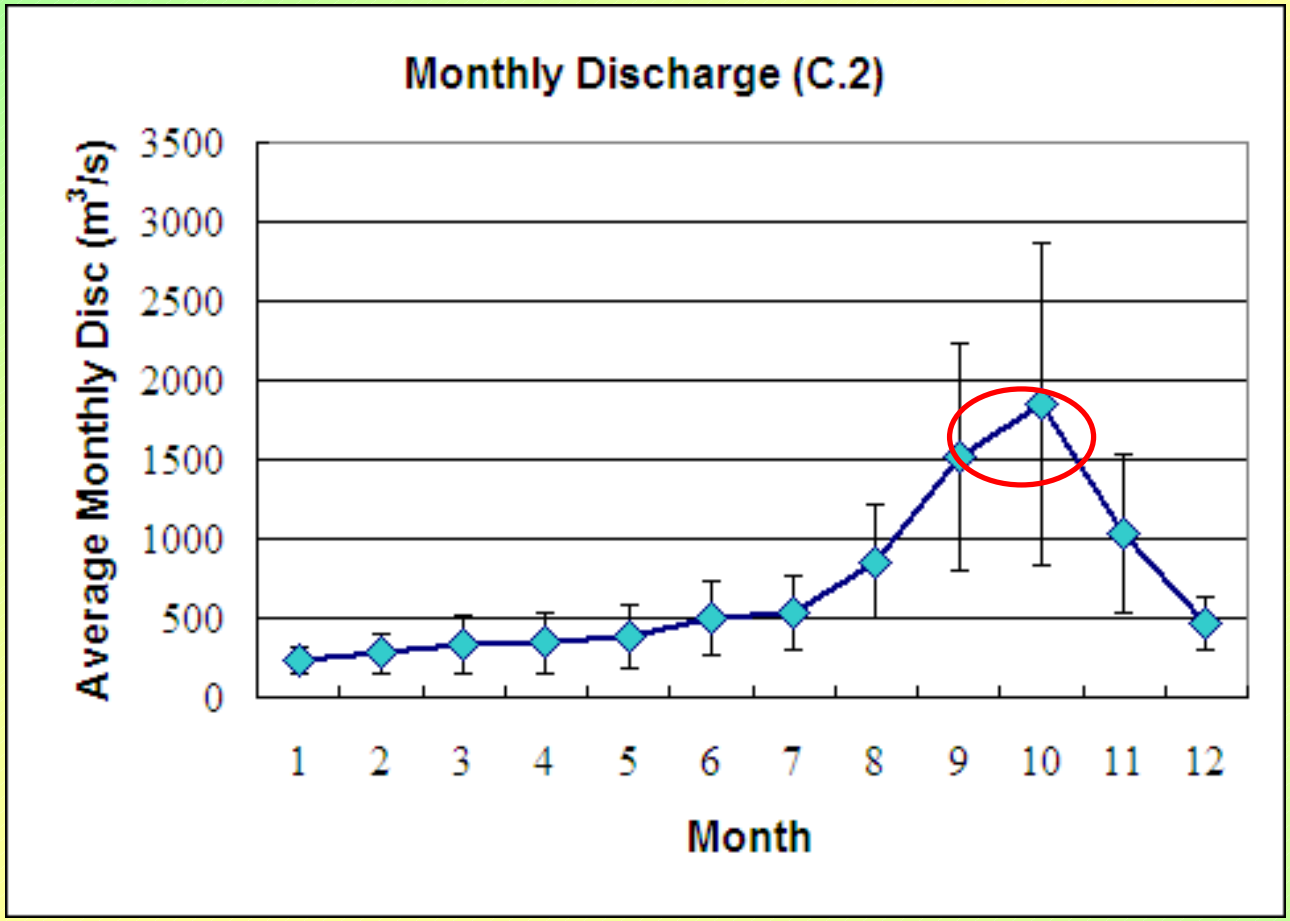


Trend in Monthly Discharge:



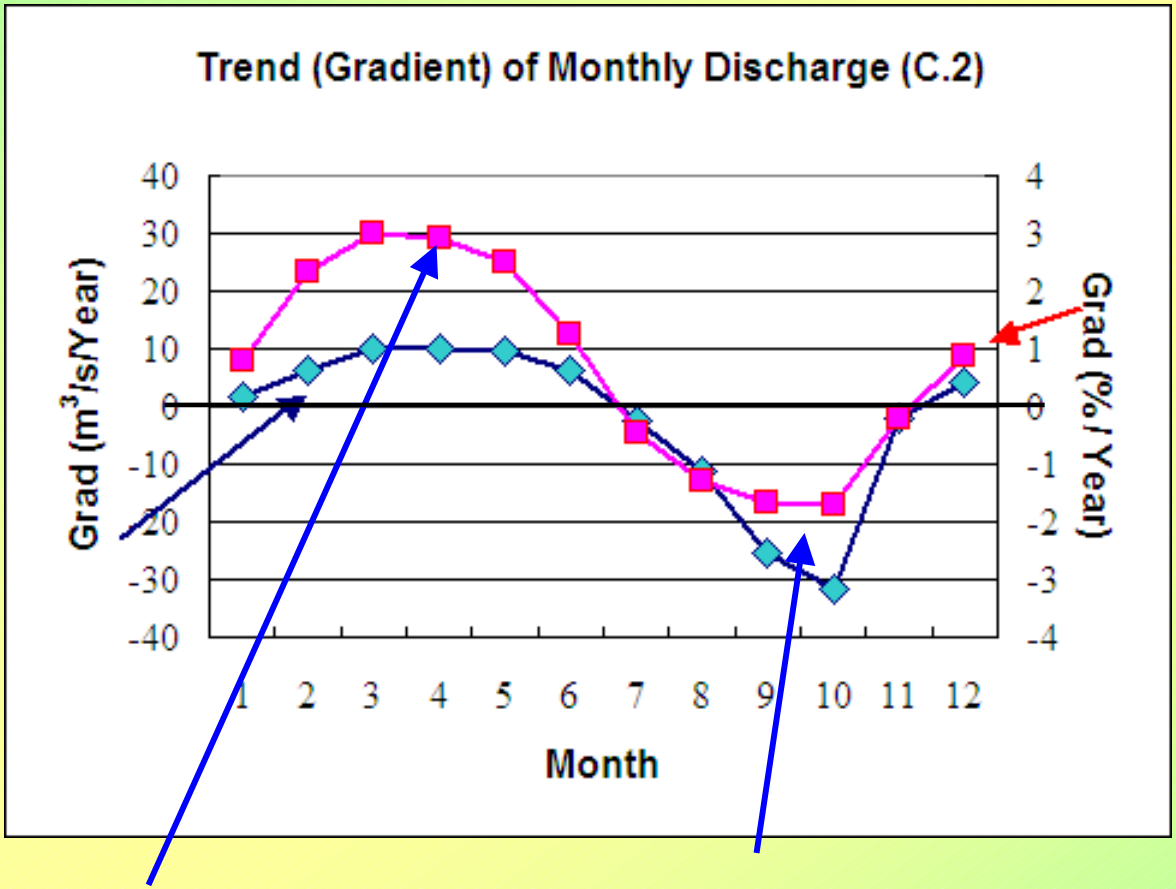
- **Increase in Dry Season / Decrease in the end of Rainy Season**
  - **Compared to Discharge Value?**

Monthly Discharge:



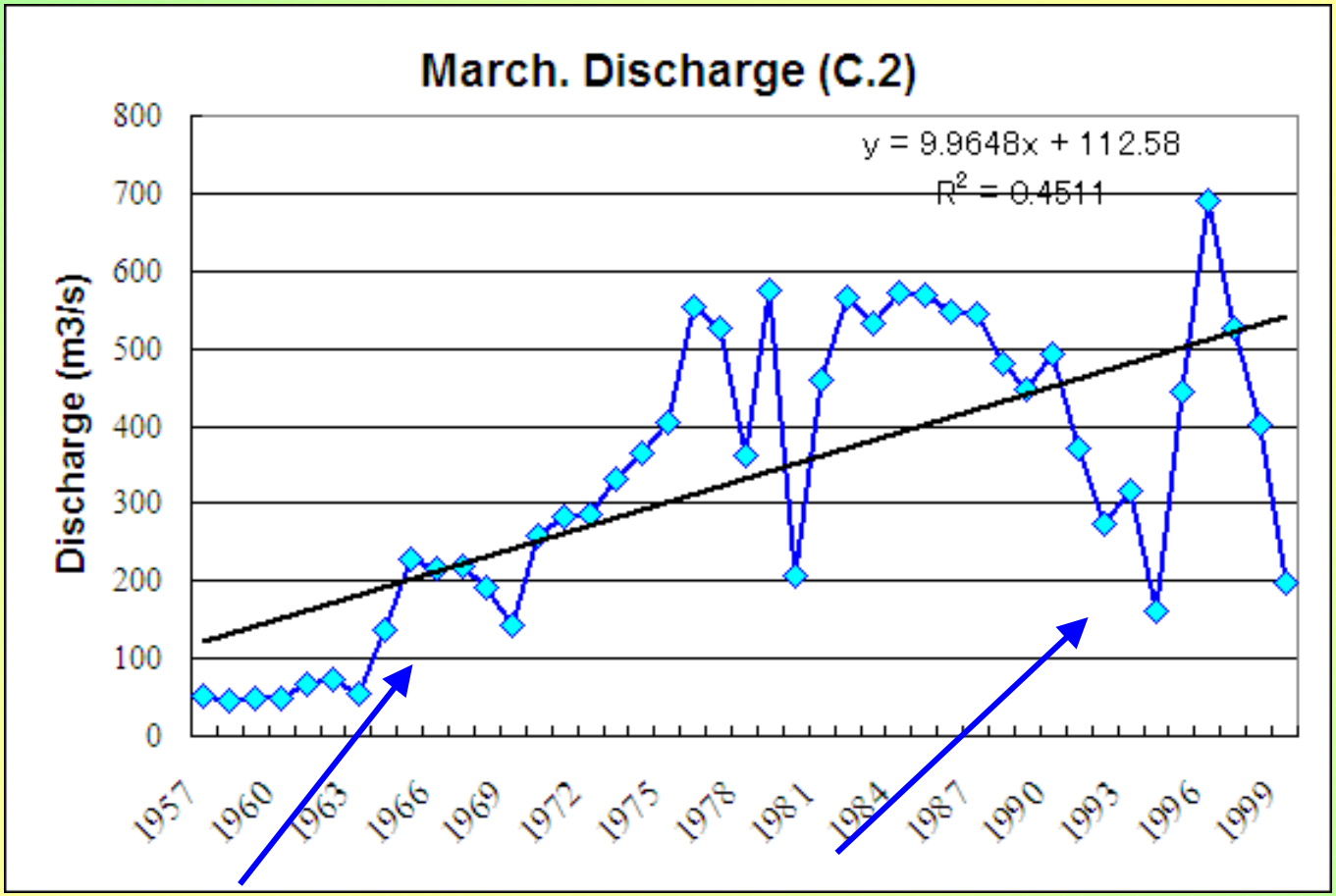
- **Sep/Oct : Large Discharge**
  - **Compared to the trend?**

Trend in Monthly Discharge:



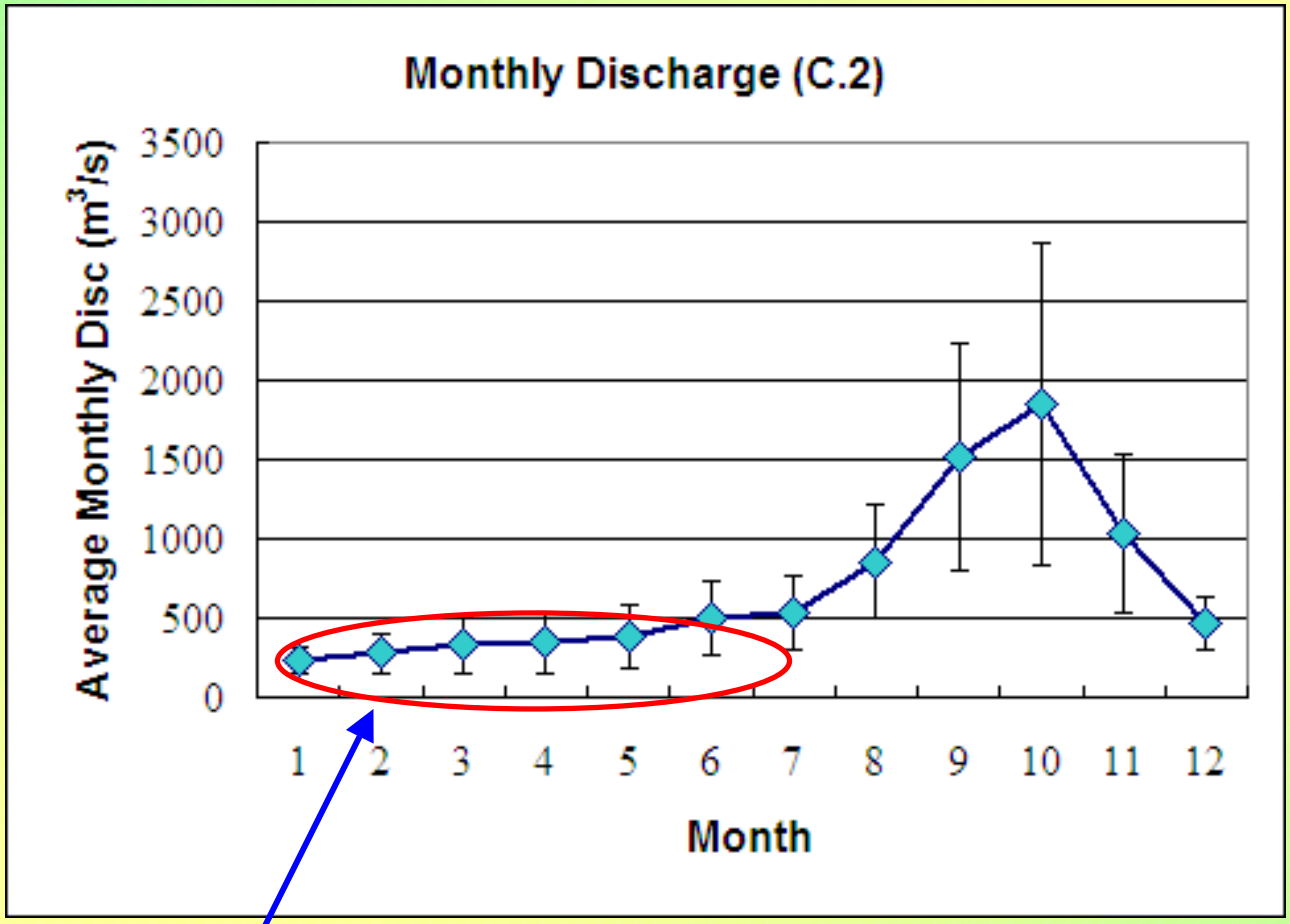
- **Increase in Dry Season / Decrease in the end of Rainy Season**

Trend in March Discharge:



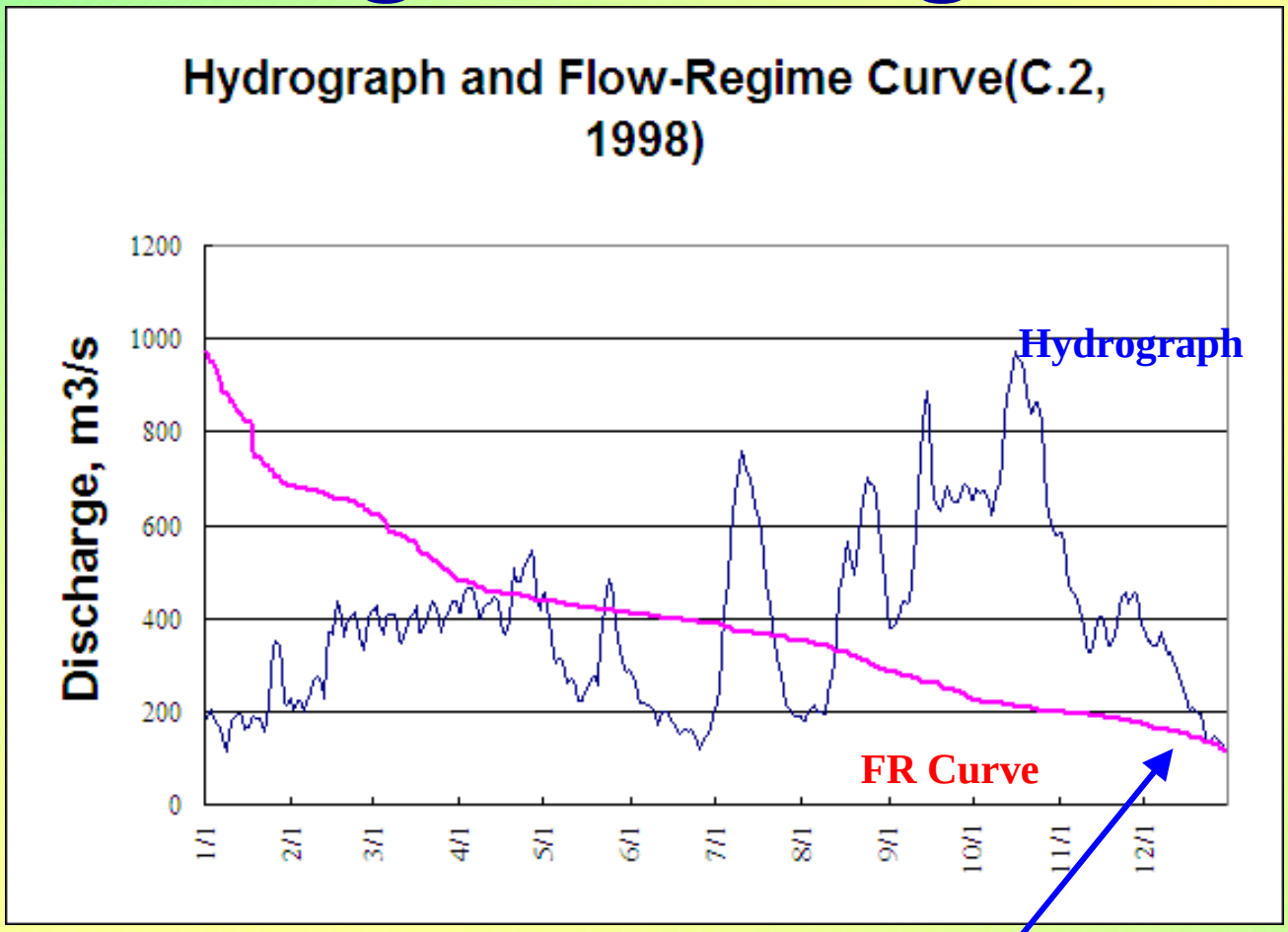
- **Rapid Increase from 1960's**
  - **Reservoir Effect?**
    - **Sometime Severe Condition in 1980's and 1990's**

Monthly Discharge:



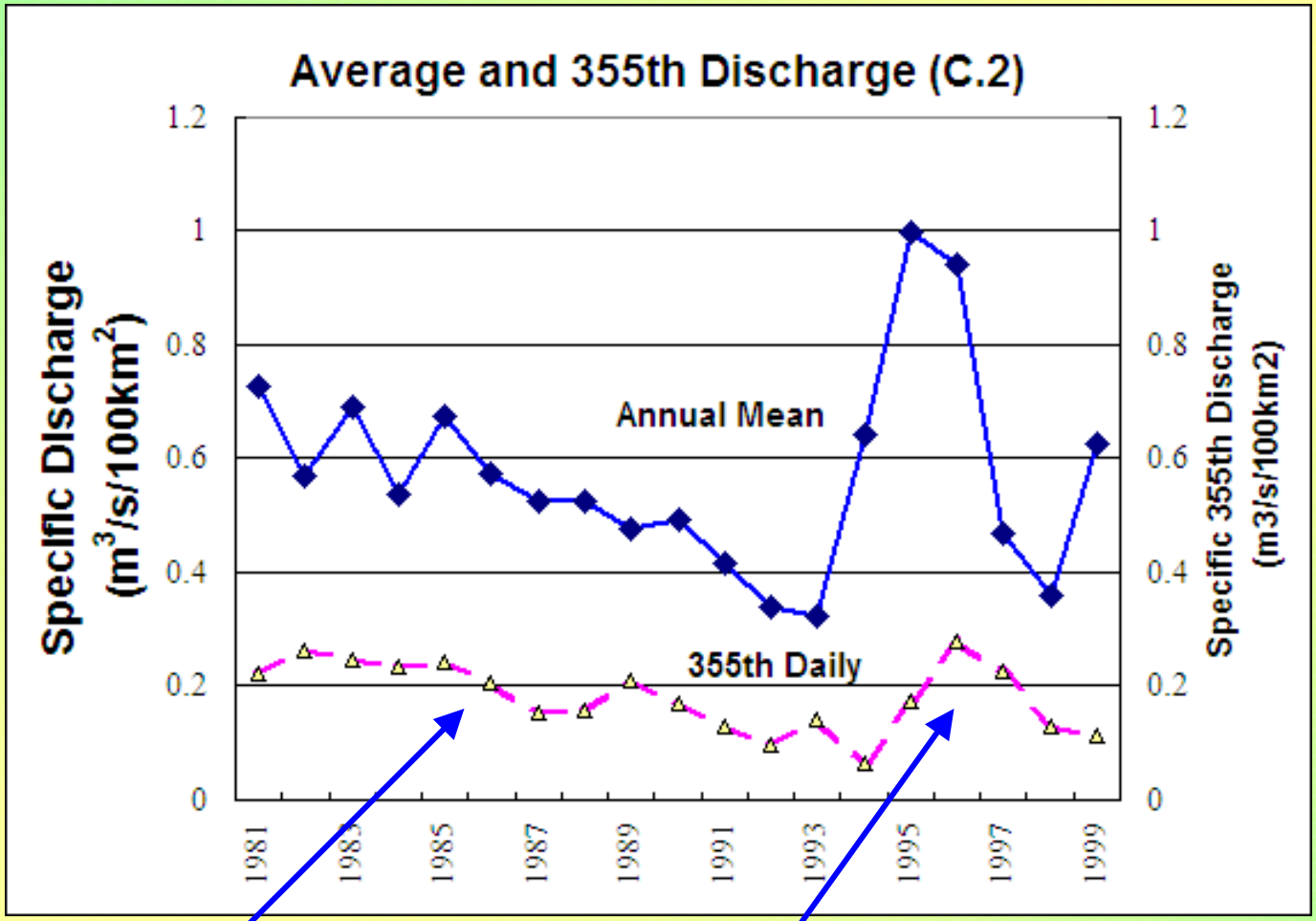
- **Dry Season : Jan-May**
- **How to express drought flow characteristics?**

Drought discharge index:



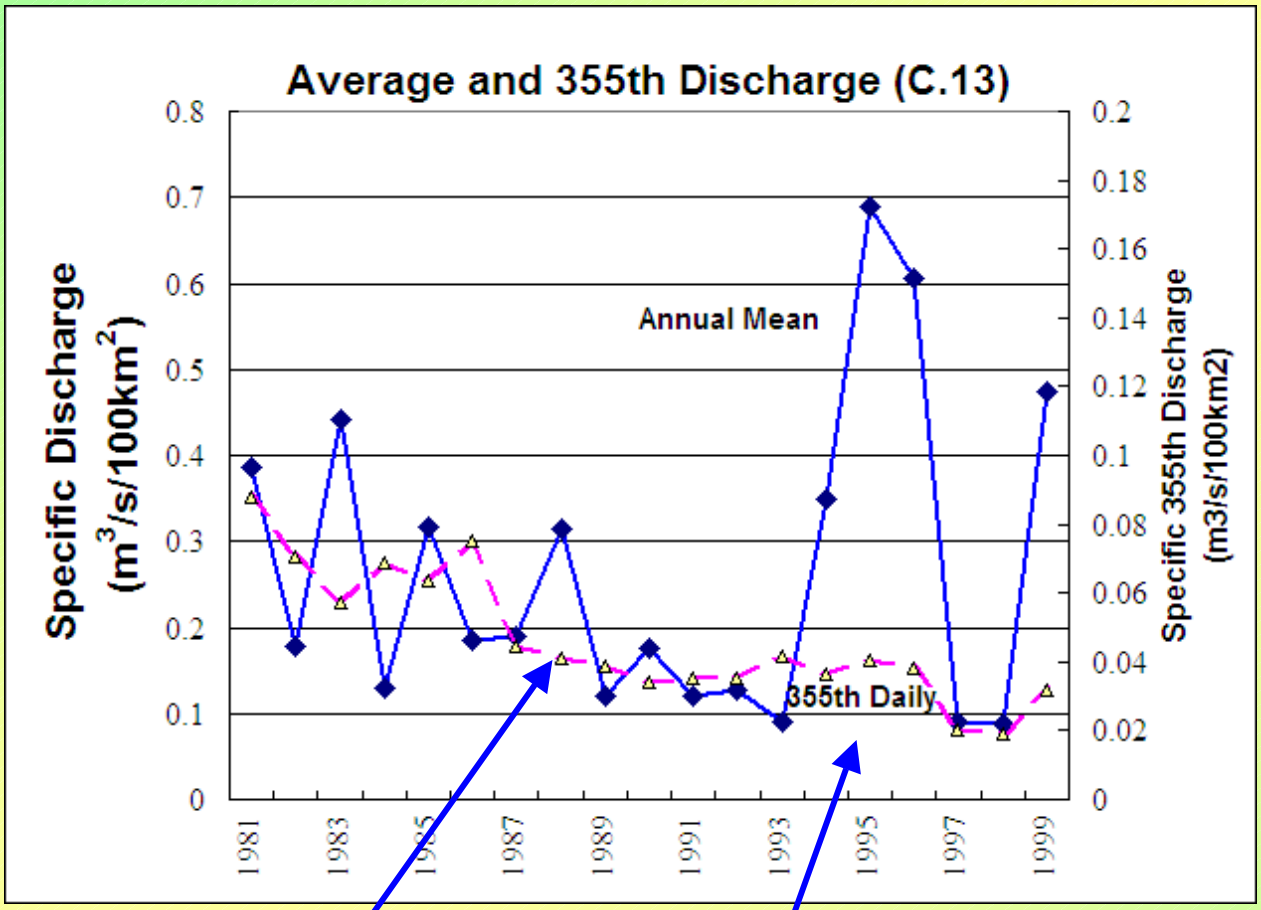
- **Index of Drought Period Flow:**
  - **355th largest daily Discharge in each year**

Drought Discharge: C.2



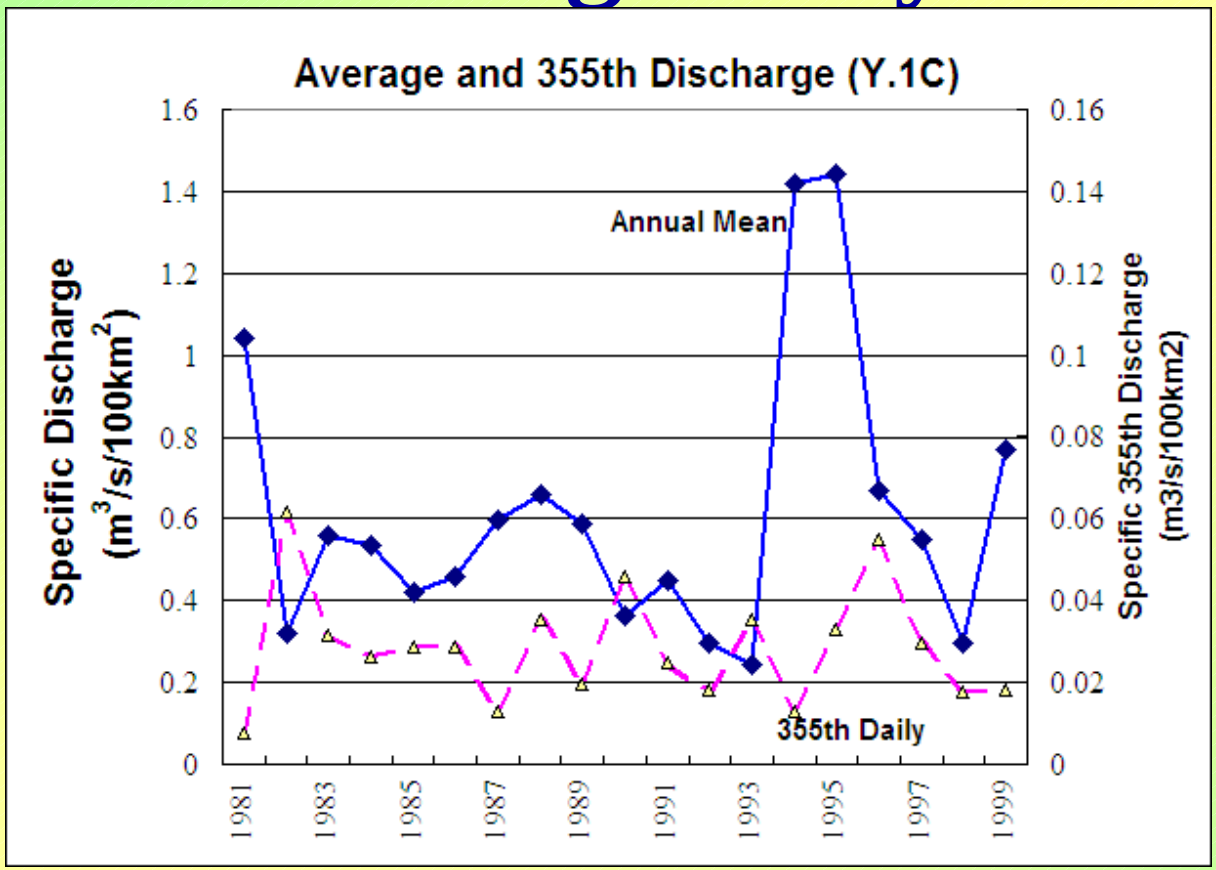
- Gradual Decrease in 1980's
- Recovery in 1994-96

Drought Discharge: C.13



- "Neighborhood" of C.2
- Gradual Decrease in 1980's
- No Recovery in 1994-96 Why?

Drought Discharge: Decreasing Everywhere?



- **The Answer is “NO”**
- **Example of Y.1C (**Phatthana Phak**)**

Change in Discharge: Geographical Difference

- **Long-term datasets reveal something!**
  - **From “average” to interannual change**
- **Increase/Decrease : Depends on changes in watershed**
- **Where increasing? Where Decreasing?**
  - **Annual Mean : Result of Mr. Tebakari, Japan**
  - **Then, how about drought discharge?**

Role of Datasets…

- **Inspiring our curiosity**
- **Helping us to Find “What is problem” before finding the solution**
- **There IS the dataset. Now is the time for carrying out more application / research / management projects!**

And More...

- **Got Results by Using GAME-T DB?**
- **Then please inform GAME-T Members and let's share information!**
- **We already have 'Data Archive' and 'Document Archive', then we want 'Result Archive'!**
- **Symposium of Results obtained by using GAME-T DB?**

Need latest info?

- **GAME-T ML (see hyperlink in the DB)**
  - **Monsoon-ML(English/Thai) :**
    BY Prof. Hashizume, Chulalongkorn Univ.
    Contact hashmich@geo.sc.chula.ac.th
  - **GAME-ML(Japanese)**
    By Univ. of Tokyo
- **DB Manager : agata@iis.u-tokyo.ac.jp**
- **Comments (and data files) welcome!**

Acknowledgement

- **GAME-T DB has been helped by**
  - **all who provided us their precious data, including both official agencies in SE Asia countries and GAME-T researchers**
  - **All who used the DB and gave comments**

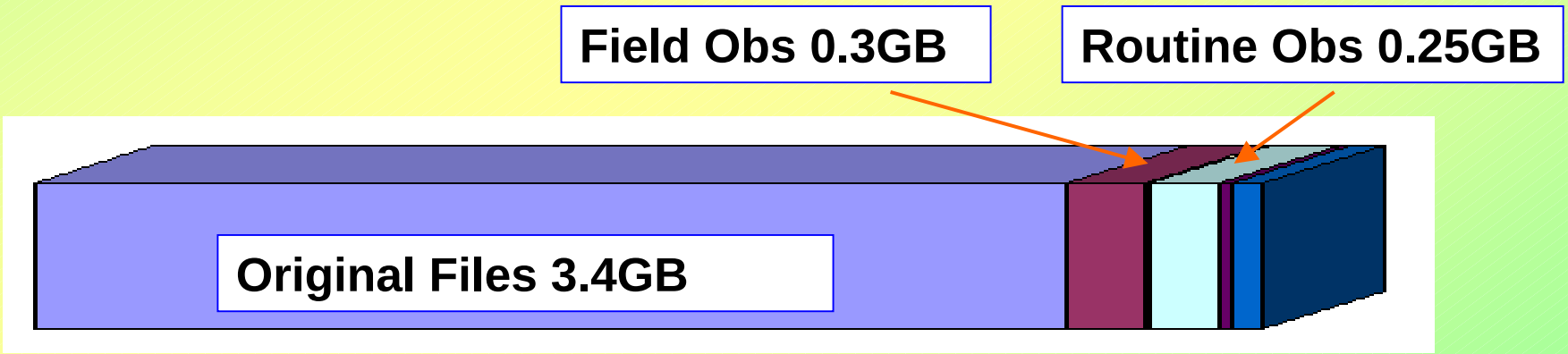
- **Mirrored DB server in Thailand was installed with NRCT's support. The server is now maintained by NRCT.**

Terima Kasih!
THANK YOU!

ขอบคุณ ครับ

Size of Files

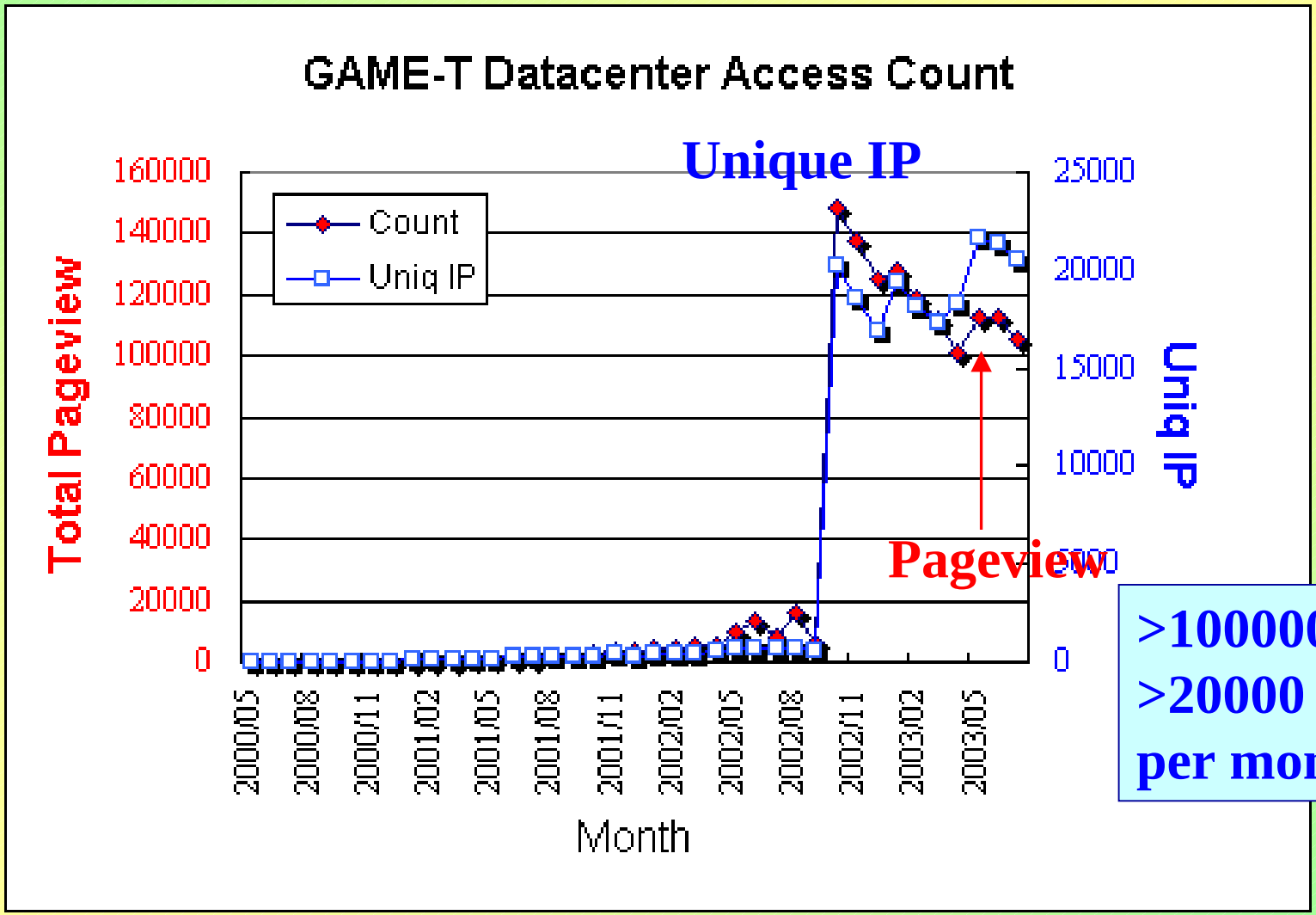
- **3.4GB out of 4.1GB is originally provided files**
  - **Original files sometimes contain huge data files**



Total : 4.1GB (2002 June) [Now 6GB]

Monthly Access Count

- **Total Pageview to date=1294915**



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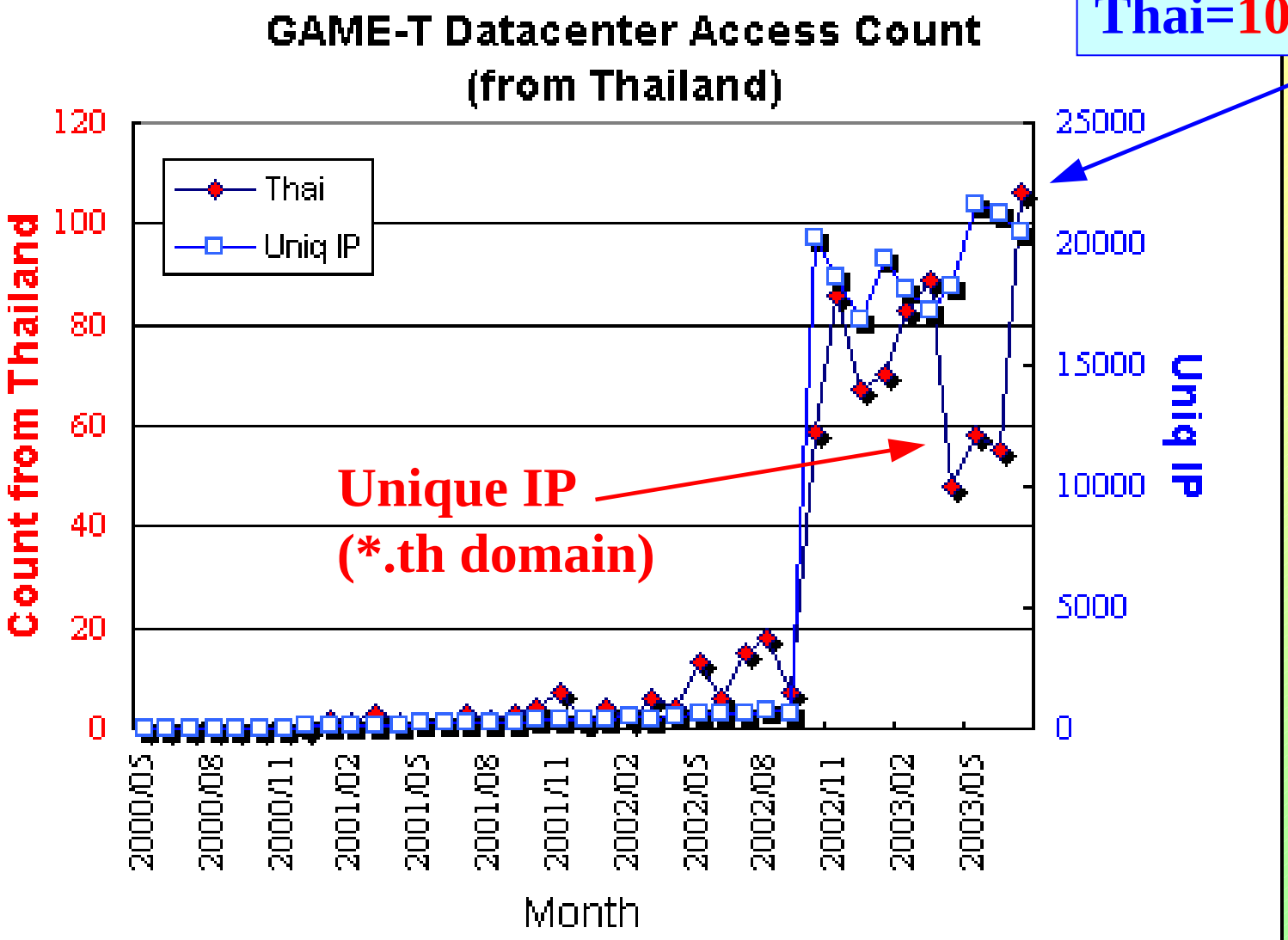
Access from Thailand

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