

The contribution that improved water information can make to the management of water resources in the Northern Territory.

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Outline

- 1) Consider the current Water Resource Management data management in the NT.
- 2) Potential Organisational Issues- Collection, Storage and Reporting
- 3) Consider Future Requirements for Water Resource Management and its Data in the Future.
- 4) What are the Advantages and Disadvantages of this Data Management System to the organisation?
- 5) Practical Suggestion From an NT Perspective.

Current Monitoring Sites

- **123 River Gauging Stations**
- **70 Rainfall measurement sites**
- **292 Ground water level monitoring bores**
- **Water Quality – Aquatic Health Branch**



Katherine River, NT



Capped Bore, Darwin Rural Area



Large Karstic Spring, Daly River NT

Current Data Collection Methods

Collection Methods

- Manual Field Work (Hydrology)
- Gauging Stations

- Flood Forecasting

- Bore Reports
- Metering
- Metering Projects

- Manual Field Work (Aquatic Health)

Data Storage

- Books and Field Notes – transferred to Hydstra
- Logged data collected, processed and transferred into Hydstra

- Telemetry Sites recorded and to internet, Hydstra and to BOM

- Submitted by drillers, licensees and project participants to Water Management Staff often in Excel spreadsheets.
- Recorded into Excel Spread Sheet and National Inventory Databases

Current Data Extraction and Reporting Methods

Geographical Information Systems- NRETA Maps and WWW

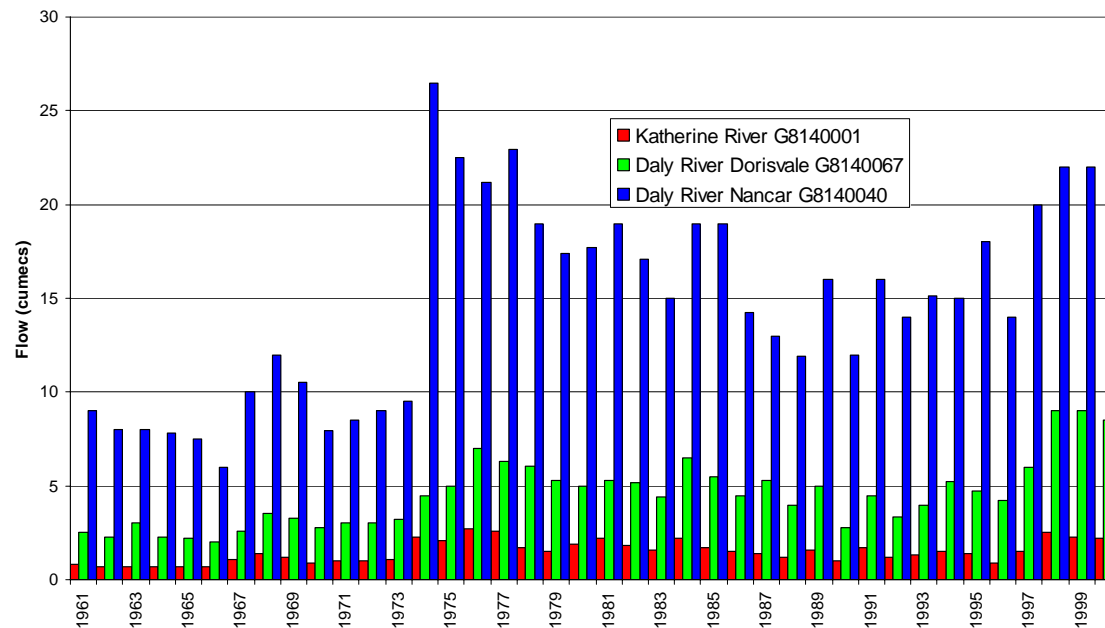
- Bore Information can be accessed at a local, regional and Territory level.
- Gauging Station Information available.
- Flood warning hydrographs
- Water Quality
- General NRM data



Hydstra- Data Plots, Data Sets and Reports

- Surface Water data
- Groundwater data
- WQ data
- Multiple data sets can be utilised to represent desired reporting outcome.

The Lowest Instantaneous Flow Rates at G814001, G8140067 and G8140040 for the years 1961 to 2000



Excel Spread Sheets

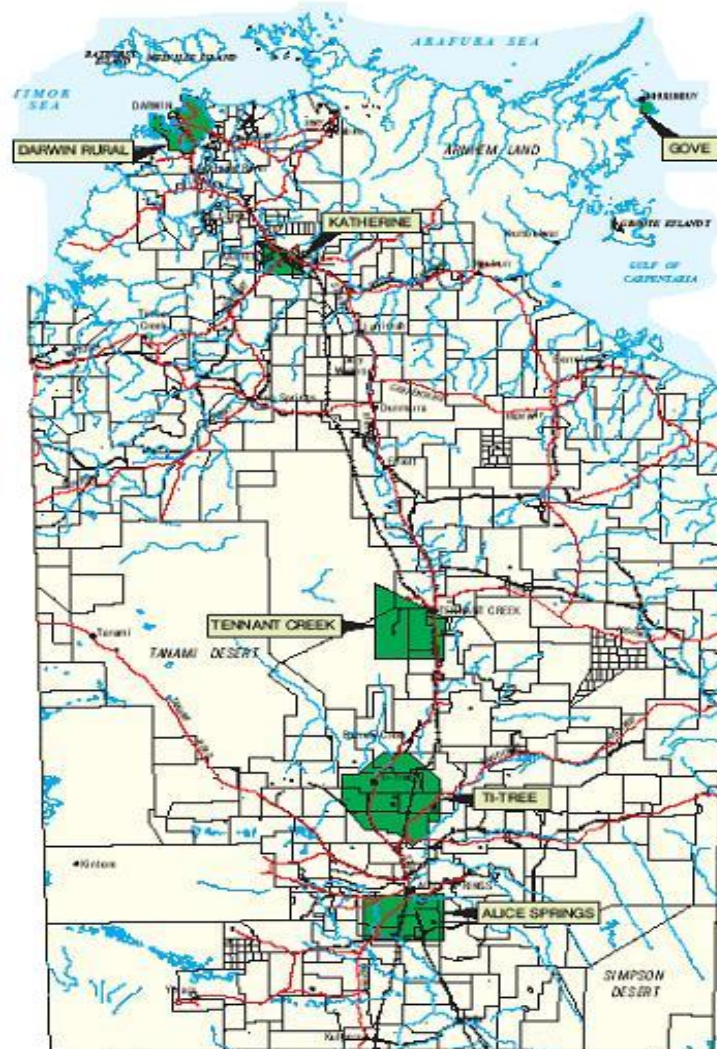
- Basic Reporting method
- Easy for Clients to understand
- Data easily transferable to other programs such as Hydstra

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
1	Licensee:	Cashews NT Pty Ltd				Kilolitres Per Year:			8,021,000		Kilolitres per month: Variation						
2	Licence No.	WRKDI		RN 23158		ID: WRKDI											
3	MONTH	YEAR	PUMPING TIME: FROM	PUMPING TIME: TO	HOURS PUMPED	METER READING	AMOUNT PUMPED (kl)	PUMP RATE (kl/Ha)	AREA IRRIGATED (Ha)	CROP	REMARKS	Completion % Used	Max Per Month (KL)				
4																	
5	JANUARY	2006					0					0.00	347,000				
6	FEBRUARY	2006					0					0.00	347,000				
7	MARCH	2006					0					0.00	347,000				
8	APRIL	2006				328,050	0					0.00	762,000				
9	MAY	2006				357,420	23,370					3.85	762,000				
10	JUNE	2006				439,500	82,080					11.97	686,000				
11	JULY	2006				482,090	42,590					6.21	686,000				
12	AUGUST	2006				536,300	54,210					7.90	686,000				
13	SEPTEMBER	2006				593,970	57,670					5.67	1,017,000				
14	OCTOBER	2006				663,400	69,430					6.83	1,017,000				
15	NOVEMBER	2006				717,890	54,490					5.36	1,017,000				
16	DECEMBER	2006				787,780	69,890					20.14	347,000				
17						TOTAL	459,730					5.73	8,021,000				
18							460										
19																	
20	JANUARY	2007				787,990	210					0.06	347,000				
21	FEBRUARY	2007				788,000	10					227.09	347,000				
22	MARCH	2007				788,000	0					227.09	347,000				
23	APRIL	2007				788,000	0					103.41	762,000				
24	MAY	2007				835,200	47,200					109.61	762,000				
25	JUNE	2007				861,940	26,740					125.65	686,000				
26	JULY	2007				888,301	26,361					129.49	686,000				
27	AUGUST	2007					-888,301					-129.49	686,000				
28	SEPTEMBER	2007					0					0.00	1,017,000				
29	OCTOBER	2007					0					0.00	1,017,000				
30	NOVEMBER	2007					0					0.00	1,017,000				
31	DECEMBER	2007					0					0.00	347,000				
32						TOTAL	-787,780					-9.82	8,021,000				
33																	
34	January	2008										0.00	347,000				
35	February	2008										0.00	347,000				
36	March	2008										0.00	347,000				
37	April	2008										0.00	762,000				
38	May	2008										0.00	762,000				
39	June	2008										0.00	686,000				
40	July	2008										0.00	686,000				
41	August	2008										0.00	686,000				
42	September	2008										0.00	1,017,000				

Potential Organisational Issues

- Climate Variability and Variance in Data and Data Collection Methods between Regions.
- A Variety of Data Custodians and Verifiers.
- Differences in Data Storage and Reporting.
- Interoperability of current most systems unavailable.
- Existing structure requires significant improvement.
- Extra resources required to setup interoperable systems.
- Extra recurrent resources required to ensure ongoing operation
- Limited ability to report on whole of NT – WCD's – Data management units
- Some areas in the NT devoid of Data collection since withdrawal of AG funding in 1986
- Timing of the introduction of the new Act?

Water Control Districts



- High quality data required to maximise ground and surface model accuracy
- Altered focus from high to low flows
- Relatively new requirements for extraction data
- Data used to monitor WAPs
- Improved metering data systems required

Metering

- Metering is required for every water extraction license issued
- Meters are purchased read and maintained by the licensee
- Stock and domestic extraction remains unmetered, apart from
- Current S&D metering project to place meters on a representative selection of bores

Advantages and disadvantages of a National System

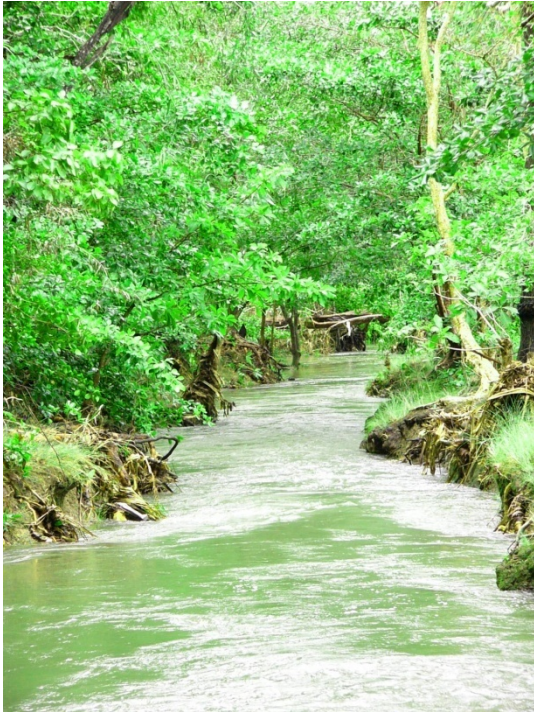
Advantages

- Data sharing
- Benchmarking
- Standardisation of data collection and storage
- Assistance with upgrade of NT systems

Disadvantages

- Resources!
- Different needs to other jurisdictions
- Extreme difficulty with data collection through community programs (NRMB/NHT)
- Very limited inter-jurisdictional resource sharing

- Strong requirement for assistance with resources to setup relatively seamless data transfer systems
- Concern as to current ability to fulfill requirements on an ongoing basis
- Flexibility with timeframes and data requirements is essential



Questions?

