

#### **Practical Solution for Murray Darling Basin**

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### **Murray Darling Basin**

- ~1 million sq km area
- 14% of Australia's area
- Length 3,375 km
- 77,000 km of rivers
- Problems include:
  - Salinity
  - Erosion
  - Blue green algae blooms
  - Water quality
  - Invasive species
  - Lack of water

#### **Murray Darling Basin Statistics**

- Over 40 Aboriginal indigenous nations
- Agricultural output \$24 billion/annum (35% Aust output)

Drought 2002-2010 cost :
\$6 billion x 8 years ~ \$50 billion

(ref. Prof Jim Pratley AM FASA Charles Sturt University)

Drought 2015-2019 cost :
\$6 billion x 5 years ~ \$30 billion

#### NSW water officials knew decades of unmeasured floodplain harvesting by irrigators was illegal

Senior group meeting in January discussed the legal implications of practice that critics blame for preventing water flowing further down the Murray-Darling system



Drone footage shot from a public road shows dams full of water on a northern NSW property.



# Murray-Darling Basin drought 'most severe' on record

by Water Source - 23/07/2019 in Natural Environment



#### 5 min read

The Murray-Darling Basin (MDB) is in the midst of the worst drought in over a century, with record high daytime temperatures and evaporation rates compounding the lack of rain.

#### Environmental Results – 2019



# Wilcannia-on-Darling once 2<sup>nd</sup> largest inland river port!



### Darling R at Menindee – 2/3 lakes generally dry



#### Palace Hotel, Broken Hill

Since 2018 14GL/yr is pumped from the Murray River at Wentworth Capital Cost ~\$500 mil, running cost not readily available



#### What next ??

After we have shortchanged our Murray-Darling Basin's (1) rivers (2) species / ecosystems (3) communities and (4) downstream farmlands that **depend** on water.

1. Reduce

- 2. Focus
- 3. Emphasize

- Let's see existing alternatives:
- focus on water extraction "on average"
- on where and when water is taken
- size protecting water with low inflows
- 4. Buy back extraction licenses that apply in times of low flows

- 5. Provide environmental flows
- 6. Improve irrigation efficiency
- 7. Reduce evaporation from surface of on-farm storages with evaporation rate is ~2m / yr
- 8. Deepen on-farm storages
- 9. Build dams to collect high inflows (with 2m / yr evaporation rates)
- 10. Establish a Royal Commission with a genuine commitment to fix it.

#### What do we need? - We need additional water.

#### Solvable

- Australia has a national problem
- The problem can be fixed and there's just one answer.
- "No-one's responsibility" is the underlying issue
- Wentworth-Broken Hill pipeline, 14 GL/yr (2018) a band aid fix
- Average MDB Inflows 1966-2020 10,230 GL
- Extra water available 3,500 GL
- Water available from the Upper Burdekin and Herbert Rivers
- Deduct water amount for FNQ environmental needs
- Problem fixed with TLC (Teamwork, Leadership, Commitment)

#### Mt Foxton Site to MDB – Gravity Channel



**Delivery Features** 

- 9,000 GL Dam at Mt Foxton
- 3,500 GL/yr inflow (ave)
- Up to ~3,500 GL/yr outflow.
- 18m wide x 5 m deep trapezoidal channel (Manning formula)
- Fall from RL350m (min) to Lake Galilee saddle RL310m – 450 km.
- Velocity 6 km/hr perfect



#### **BURDEKIN DAMS**

Name	Elevation	Capacity	Year	Evap'n
Hells Gate Dam	372m	2,000 GL	tba	20 %
Mt Foxton Dam	380m	9,000 GL	tba	10 %
Burdekin Falls Dam	154m	1,860 GL	1987	37 %
Burdekin Falls Dam extension	156m	2,010 GL	soon	45 %

# THE SOLUTION

#### Feature

Elevation

Capacity

#### Requirement

To gravity feed over Great Dividing Range Water Inflow Maximize

Store in floods / Discharge in low flows

Queensland has 2.6m/yr – Dam in gorge Evaporation

Section 100 Constitution needs to be (and is) addressed

FNQ environment needs to be sorted Environment

**FNQ** Locals Townsville TEL requirements to be met

## Water flows in Darling with Burdekin/Herbert Boost



Federal, State and MDBA Responses

- 1. The MDBA says that new water is a Federal issue
- 2. The Federal Government says water is a state issue
- 3. Queensland does not comment with no studies done to send water south.
- 4. Federal Govt suggests "we" get Queensland Govt to ask Federal Govt to send water down to the MDB.

"We" must solve this impasse.

#### The Australian Constitution



Australian Constitution – Section 100 "THE COMMONWEALTH SHALL NOT BY ANY LAW OR REGULATION OF TRADE OR COMMERCE, ABRIDGE THE RIGHT OF A STATE OR THE RESIDENTS THEREIN TO THE REASONABLE USE OF THE WATERS OF RIVERS FOR CONSERVATION OR IRRIGATION"

Federal Govts have used the above Section 100 to "wash their hands of any responsibility".

There is enough water to share.

#### Excess Water for "reasonable use"

River	<b>Current</b> Ave Outflow	Deduct MDB / QLD Take-off	<b>Excess</b> Ave Outflow after take-off
Burdekin River	8,500 GL/yr	MDB 2,400 GL/yr QLD 2,100 GL/yr	4,000 GL/yr
Herbert River	3,900 GL/yr	MDB 1,100 GL/yr	2,800 GL/yr

Appraisal: S100 would not be infringed. Christopher McEwen SC

# Huka Falls drains New Zealand Lake Taupo 7,000 GL/yr (2x Burdekin contribution)



# Why not? if Mt Foxton Dam is so obvious

- 1. Any new dam will have environmentalists objecting.
- 2. Mt Foxton Dam would negate the "nearly approved" Hells
- Gate Dam, that pro-dam groups have fought for so long.
- 3. Against the Mt Foxton site will be:
  - Local business groups
  - Politicians and
  - Sitting Member of Parliament
- 4. Transferring Qld water to NSW? most of the Queensland state will be against such a proposal."

#### **Environment Issue**

"People say the Great Barrier Reef will benefit from reduced river flow – partly true. Mother nature makes productive use of **all** water. The river channels, estuaries, mangroves, fisheries etc are all shaped by that water, both physically and biologically."

### Conclusions

- 1. The restoring of the MDB is possible with standard engineering and TLC (Teamwork, Leadership and Commitment.
- 2. Our Constitution Section 100 is not infringed.
- 3. The Townsville Enterprise Limited (TEL) has a Grant Deed with the QLD Govt. and is preparing for the Hells Gate Dam – paid by Federal funding.
- 4. If Hells Gate Dam is built, the prospect of sharing (excess water) with the MDB will be dead with future generations suffering.

Solution - the Basic Steps (to be investigated thoroughly)

- Step 1 Address environmental FNQ Community concerns
- Step 2 Stop further work on Hells Gate Site
- Step 3 Build 9,000 GL dam on Burdekin R at Mt Foxton site.
- Step 4 Build 2,000 GL dam on Herbert R at Glen Eagle.
- Step 5 Build gravity channel south via Lake Galilee
- Step 6 Feed Longreach and MBD, with offshoots to:Brisbane, Toowoomba, Sydney by solar pumping.