

2ND ISF PRE-CONFERENCE MURRAY RIVER FIELD TRIP

Day 1 – Tuesday 25 March

Main topics of the day: Introduction to geological, hydrogeological and climate history of Murray-Darling Basin; Dryland Salinity- science and management; Water balance, drought and water resources in upland landscapes; Landscape Hierarchies- ASRIS and physiographic regions

Pick-up at Melbourne airport domestic terminal	Congregate from 07:00	
Drive to Lexton, Central Victoria	Bus departure from terminal at 08:45 (2 hrs) Arrive 10:45	On-bus: field trip overview; introduction to Hydrogeology, Salinity Dynamics and Climate Change History of M-DB; Dryland salinity – science and management overview
STOP 1: Bet Bet sub-catchment, Loddon Catchment	Gully walk (35 mins) followed by discussions 11:20-12:20 (1 hr)	Next generation groundwater flow systems– multi-scale mapping; physiographic regions; Salinity management in upland landscapes local actions
LUNCH: at Bet Bet	12:20-13:10 (50 mins) then 20 mins walk back to bus Depart 13:30	
Drive to Kamarooka	2 hr 30 mins drive (short toilet stop at Lexton or Avoca)	On-bus discussion about management approaches to salinity management, including SIF3; CSSMP program; Hydrogeology and groundwater resources in basalt landscapes
STOP 2: Kamarooka	Arrive 16:00	Managing discharge of saline groundwaters – pragmatic farming system approaches to salinity management; hydrogeological understanding, social context.
EVENING MEAL	Commence 18:00	Barbeque at Kamarooka- interaction with local catchment community group (NUFGP)
	Return drive to Bendigo (40 mins)	
OVERNIGHT	Estimated return 21:00	Quest Apartments, Bendigo

Day 2 – Wednesday 26 March

Main topics of the day: Hydrogeology and water resources in the northern plains of Victoria- Loddon Catchment; Primary Salinity in the M-DB – Lake Tyrrell example; Climate change in Holocene; Murray River – history of water management; River Murray Corridor Airborne Geophysics Project- new sights into salinity and water in the Murray Floodplain ; Living Murray Initiative and Hattah Lakes wetlands restoration project; riverine plain ecosystem management

Breakfast 0630 - 0730		
Depart Bendigo & drive to Lake Tyrrell	Depart 8:00	Hydrogeology and water resources in the northern plains of Victoria- Loddon Catchment; Holocene Climate History; Overview of primary salinity occurrences
STOP 1: Lake Tyrrell	11:15-12:15 (1 hr)	Lake walk, presentation and discussion: primary salinity and acidity at groundwater discharge site
Drive to Robinvale	12:15-13:30 (1 hr 15 mins)	Overview of Murray Basin NAP projects

LUNCH: at Lock 15, Robinvale	13:30-14:15 (45 mins)	
STOP 2: Lock 15, Robinvale	14:15-15:15 (30 mins)	History of river and water management in Murray River; RMC AEM project
Drive to Hattah Lakes	45 mins	AEM projects
STOP 3: Hattah Lakes	16:00-17:00 (1 hr)	Hattah Lakes is a wetland system of international significance. It is a priority site for rehabilitation in the \$500 million Living Murray Initiative.
Drive to Mildura	17:00-18:30 (1 hr 20 mins)	
EVENING MEAL in Mildura	Commence 19:30	
OVERNIGHT	Mildura	Hotel Mildura
Day 3 – Thursday 27 March		
Main topics of the day: Regional salinity management planning; history of irrigation at Mildura; irrigation refurbishment; water trading; salinity interception; Climate history in Murray Basin & Aboriginal perspectives and history in the region- Murray Lake Mungo National Park.		
Breakfast 0700 - 0800		
Depart Hotel Mildura	08:15	
Drive around Mildura Irrigation District	45 mins	Irrigation history at Mildura; layout of irrigation plots; crops.
STOP 1: Historic Chaffey pump site	09:00-09:45 (45 mins)	Discussion of more recent reconfiguration of irrigation and efficiency drives; water supply and trading issues
Drive to stop 2	15 mins	
STOP 2: Viewpoint overlooking floodplain	10:00-10:45 (45 mins)	Nyah to the Border Regional Salinity Plans; Salinity Interception- Sunraysia and RMC AEM datasets
Drive to Mourquong	30 mins	Continue discussion of water and salinity issues
Mourquong River Murray (pink) salt	11:15-11:45 (30 mins)	Presentation on salt production
Drive to Lake Mungo	1 hr 30 mins	Salinity Management in broader NRM context
LUNCH	13:15-13:55 (40 mins)	Lake Mungo Visitors Centre- time for lunch & exploration of visitors centre
Drive to Mungo viewpoint	10 mins	
STOP 4	14:05-16:30 (2 hrs 30 mins)	Lake Mungo- climate change history and landscape response; aboriginal history and perspective on Murray River; Broader hydrogeology and landscape evolution of Murray Basin; rangeland farming.
Return drive to Mildura	1 hr 30 mins	
Arrive back at Hotel Mildura	18:00	
EVENING MEAL	Commence 19:00	bbq at Mildura Lawn Tennis Club (on banks of Murray River); interaction with local catchment

		and irrigation groups
Day 4 – Friday 28 March		
Main topics of the day: Hydrogeology of Murray Basin in SA; Salinity Management and planning in South Australia; Salinity Interception Schemes; Living Murray Initiative- Icon Sites; New insights into salinity and water in SA from in-river and airborne geophysics projects; River management in SA; Local perspectives on salinity management.		
Breakfast 0700 - 0800		
Depart Hotel Mildura	08:30 (1 hr 30 mins)	
Arrive SA	10:00 Victorian time/09:30 SA time.	Pick up SA reps at Yamba inspection centre
Drive to Stop 1	45 mins	Introduction to SA hydrogeology; introduction to river management in SA; drive via Pike River floodplain views - discussion of degradation; and via Bookpurnong SIS
STOP 1: Loxton Research Centre	10.15-11.15 (1 hr)	Salinity and horticulture, irrigation efficiency; run of river salinity monitoring, nanotem; (morning tea provided)
Drive to Stop 2	15 mins	
STOP 2: Loxton Floodplain	11:30-12:00 (30 mins)	SIS infrastructure (bores and toe drain), floodplain dewatering, Al and Fe clogging, environmental recovery, salt in the floodplain
Drive to Stop 3	30 mins	Inland sulphidic soils
STOP 3: Yatco Lagoon	12:30-13:00 (30 mins)	Wetland and drainage basin degradation and sulphidic soils; wetland water recovery and wetland rewatering risks
Drive to Lunch stop at Banrock Station	15 mins	
LUNCH: Banrock Station	13:15-14:15 (1 hr)	
STOP 4: Banrock Station	14:15-15:05 (50 mins)	Salinity management strategies in broader NRM context in SA; river management; viticulture; aquaculture using SIS waters; floodplain health and wetland regeneration; Riverland and floodplain AEM in SA
Drive to Waikerie	40 mins	Waikerie SIS, disposal of saline waters, Stockyard Plains AEM
OPTIONAL STOP5 (if time permits): Ramco Lagoon/Waikerie SIS	15:45-16:15	Ramco Lagoon, inland sulphidic soils, Waikerie SIS, disposal of saline waters, Stockyard Plains AEM
Drive to Paddle Steamer	10 mins	
Arrive at Paddle Steamer berthed at Waikerie	16:25	
EVENING CRUISE AND MEAL	5 hr cruise	Murray Queen paddle steamer (accommodation on board and /or Kirriemuir Motel)
OVERNIGHT	Waikerie	Murray Queen and/or Kirriemuir Motel
Day 5 – Saturday 29 March		
Main topics of the day: Salt interception and disposal basins; Murray Gorge section and hydrogeology; emerging acid soils issues; Langhorne Creek/Angas		

Bremer Plains- salinity and groundwater issues including water recycling; Mouth of Murray - sedimentation and mouth closure; water barrages and Coorong Issues; Murray-Darling Basin history from off-shore drilling record.		
Breakfast 0700 - 0800		
Depart Waikerie	08:30	
Drive to Gorge Lookout	1 hr 30 mins	Hydrogeology, evolution of gorge section
STOP 1: River Murray Gorge	10:00-10:15 (15 mins photo stop)	Big Bend Lookout, Nildottie
Drive to Langhorne Creek	1 hr 45 mins	River levels, Wellington Weir and sulphidic soils; Angas Bremer hydrogeology; discharge basins
LUNCH: Langhorne Creek	12:00-13:15 (1 hr 15 mins)	Lake Breeze Winery, Langhorne Creek
STOP 2: Langhorne Creek	13:15-14:15 (1 hr for presentations)	Salinity, soil salinity monitoring and measurement, horticulture, aquifer issues, water recycling
Drive to Goolwa	1 hr	Angas Bremer Hills salinity and hydrogeology
STOP 3: Goolwa Barrage	15:15-16:00 (45 mins)	Barrages, water levels, and Coorong health
Drive to Stop 4:	30 mins	River levels; Hindmarsh Island issues
STOP 4: Hindmarsh Island	16:30-17:15 (1hr 15 mins)	Mouth of Murray River- closure and dredging; offshore drilling records- history of the basin
Drive to Adelaide	2 hrs	
Arrive in Adelaide	19:15	Drop-off in Central Adelaide- North Terrace