APPENDIX 3. LUCINDA EXPERIMENT PLAN, 8-21 FEBRUARY 2004

Project and PIs	***Activity***	***Dates***	***People***	***Comments***
Benthic Boundary Layer Mixing and Suspended Sediment Profiles *Charles Lemckert* *Jesse Wu* *Phil Mulhearn* *John Dunlop* *Nathan Benfer*	Sediment grabs (color, PSD)	One of Challenger dates	Patrice, Nathan	Book Challenger; Sediment grab (JCU)
	Benthic layer sediment concentration profile	Week 2	Jessy, John	ASSM acoustic sediment profiler – off the pier – truck w/ a crane???
	PSD in situ	All	Jessy, Nathan	CTD with LISST100
	Benthic layer 2D current velocity	Week 2	Jessy, Nathan	Nortek point Velocity meter
Hydraulic model *Shigeru Tabeta* *Ian SF Jones*	Tidal cycle sampling – Marina, Pier, B2, EJ	1 day, 6-8 hours, sampling every 30 minutes	4 people	Vertical profiles (3 depths) of TSS, currents (visual or ACDP), salinity
	Surface current	8-10 February	Shigeru	Visual, cork or dye (milk)
	2 Herbert branches survey – current meter, cross-sectional area	2 days, after rain (no SSS front), close to branching	Mal, Patrice, Ian, Arnstein	2 ADCPs, Bananaboat, echo sounder
Variability of Diffusivity *Patrice Kalangi* *Mal Heron* *Charles Lemckert*	Diffusivity profiles along transects	Week 1 – Sediment grabs days and other days for different wind conditions	Patrice, Mal, Charles, boatperson	SCAMP Challenger and Bananaboat
Nutrient budget *Mal Heron* *Patrice Kalangi* *Arnstein Pritz*	N, P analyses	All	Mal, Patrice	Niskin bottles, analyses at JCU
	Fluorometer	All	Mal, Patrice	Calibrate fluorometer
	Salinity profiles, EM survey flights	Selected days	Mal, Arnstein, boatperson	Bananaboat
	CTD profiles and transects	All	Mal, Patrice, boatperson	CTD, Bananaboat
Satellite validation and whitecaps *Lioudmila Ametistova*	Channel to open water transects	Satellite days	boatpeople	Challenger - arrange with Orpheus
	Chlorophyll analyses	Satellite days	Sarah-Jo	Analyses at JCU, compare with fluorometer
	Yellow substance absorption	Satellite days	Lioudmila, at JCU	Cuvettes, holders from Chemistry USYD; Pre-combust jars
	SeaWiFS	Feb 8, 9, 10, 14, 15, 17, 19, 20, 22	Lioudmila	Enquire HTOW
	MERIS	Feb **10**, 11, 13, **14, 17, 20**	Lioudmila	Order Full Resolution images at least 2 weeks in advance

Sediment model *Lioudmila Ametistova*	Aerial Photographs – jetty, plume transect	6 days	Arnstein, Shigeru, Michele	Dye for registration; Whitecaps, both side of the front
	Suspended load transport = Fluid velocity and TSS	All	Lioudmila Nathan, Michele, Jesse, Charles	Oven; Glass dishes; Electrobalance (Ross); sieves; Acoustic Doppler Velocimeter
	Bottom grain density	Sediment grabs days	Michele	Phil Malhearn's technique
	Suspended grain density	TBD	Michele	The same except large volume of water – pump???
	Relationship between river discharge and TSS	All	Lioudmila, Michele	At Marina To improve Mitchell's formula
	Turbidity	All	Michele	Nephelometer
	Visibility Secchi	All	Boat and pier people	
	Flocs – in-process video microscope	All	Nathan, Jessy, Lioudmila	PVM
	PSD USYD	Last few days	Lioudmila, Michele	Nelson, at USYD
	PSD October follow-up	2 analyses days at JCU	Lioudmila	At JCU
Phytoplankton growth *Lioudmila Ametistova*	Culturing phytoplankton	At least 1 week	Sarah-Jo	Bottle, Chl analyses
	Phytoplankton identification	All	Sarah-Jo	Microscope, Manual
Relevant to all projects	Wind/ tide/ discharge data	All	BOM	Internet connection

Name	Affiliation	Week 1	Week 2	E-mail address
Charles Lemckert	Griffith University, Australia	-	Yes	c.lemckert@griffith.edu.au
Jesse Wu	Tongji University, China	Yes	Yes	jessewu6802@sohu.com
Phil Mulhearn	OTG/DSTO, Australia	-	-	Phil.Mulhearn@otg.usyd.edu.au
John Dunlop	Autoscan, Australia	-	Yes	jdunlop@acoustoscan.com.au
Shigeru Tabeta	University of Tokyo, Japan	8-10 Febr	-	beta@yuiko.naoe.t.u-tokyo.ac.jp
Ian SF Jones	OTG, USYD, Australia	Yes	-	otg@otg.usyd.edu.au
Mal Heron	JCU, Australia	Yes	Yes	Mal.Heron@jcu.edu.au
Arnstein Prytz	JCU, Australia	Yes	Yes	Arnstein.Prytz@jcu.edu.au
Victor Taylor	Applied Curiosity, USA	-	-	Victor.taylor@appliedcuriosity.com
Ewa Kwiatkowski	GSFC, USA	-	-	ewa@simbios.gsfc.nasa.gov
Lioudmila Ametistova	OTG, USYD, Australia	Yes	Yes	L.Ametistova@civil.usyd.edu.au
Patrice Kalangi	JCU, Australia	Yes	Yes	patrice.kalangi@jcu.edu.au
Nathan Benfer	Griffith University, Australia	Yes	Yes	n.benfer@gu.edu.au
Michele Rogers	USYD, Australia	Yes	Yes	mrog5081@mail.usyd.edu.au
Sarah-Jo Magner	USYD, Australia	Yes	Yes	smag6378@mail.usyd.edu.au

Dates	Activity	Venue
7 February 2004, Saturday	International Workshop	Ingham
9-21 February 2004	Field experiment	Lucinda
15 February 2004, Sunday	Progress reports and discussion	Lucinda
23-28 February 2004	Writing up reports	Home institutions

List of equipment

Equipment	Abbreviation	Number	Who brings
ASSM acoustic sediment profiler	ASSM	1	John Dunlop
Suspended sediment sensor	LISST100	1	
Conductivity Temperature Depth Sensor	CTD	1	
Nortek point Velocity meter (week 2)		1	
Acoustic Doppler Current Profiler (real-time)	ADCP	1	Charles Lemckert
Self Contained Autonomous Microstructure profiles (week 2)	SCAMP	1	
Microscope for viewing and recording particle sizes	PVM	1	
Nephelometer + 10 m cable		1	
Conductivity Temperature Depth Sensor	CTD	1	
Fluorometer		1	
Niskin bottle		1 or more	
Wave gauge		1	JCU
Plastic filtering kit and vacuum pump, from CTR		1	
Distilled or purified water, from CTR		30 liters	
Printer, PPT projector		1, 1	
Plastic bucket, ropes		2, 20m each	
Eski boxes		3-4	
Anemometer		1	
Sediment grab		1	
Digital camera		1	
Water pump		1	
Optical microscope		1	
Measuring glassware		1l, 2l, cylinder	OTG
Niskin bottles		2	
Nephelometer		1	
Anemometer		1	
1 liter plastic bottles		50	
Dessicator		1	
Secchi disk, rope		2, 20m	
Glass filtering kit, clamp is missing!!!		1	
Electric and hand-held vacuum pumps		1, 1	

Tweezers, gloves, plastic bags, markers, tape, Al foil, tissues, chemical freezing packs	
Sieves	70, 150, 300 um
Filter papers, 20 um, 8 um, 0.45 um, 0.22 um, GF/F (0.7 um)	100, 90, 90, 90, 290
Glass jars for YS analyses	35
Petri plastic and glass dishes	70, 40
Dye	
GPS	1
Electrobalance, 3 digits accuaracy	1
Digital camera	1
Tool box	1
First Aid Kit	1

Acronyms (alphabetically):

ADCP – acoustic Doppler current profiler
BOM – Bureau of Meteorology
B1, B2, B4, EJ – sampling points at the 8-km sugar jetty (EJ – end of the jetty)
CTR – Center for Tropical Research, JCU
Challenger – 9-m catamaran for open-water studies
Chl – chlorophyll
DSTO – Defence Science & Technology Organisation
EM – electromagnetic sensor
HTOW – Townsville receiving station for SeaWiFS
JCU – James Cook University
Marina – boat ramp at the Herbert river mouth
N, P – nitrogen, phosphorus
OTG – Ocean Technology Group, USYD
Pier – small fishing pier in the Hinchinbrook channel
PSD – particle size distribution
PVM – microscope for viewing and recording particle sizes
SeaWiFS, MERIS – ocean color remote sensors
SCAMP – Self Contained Autonomous Microstructure profiles – PME
SLFMR – Scanning Low-Frequency Microwave Radiometer
SSS – sea surface salinity
TSS – total suspended solids
YS – yellow substance
USYD – University of Sydney