PROGRAM

Sunday, April 18, 2004

18.00-21.00 **Conference Icebreaker** Social welcome event at the Brewery Bar and Restaurant opposite Circa Theatre, Taranaki Street. Conference delegates can register and pickup programme/abstract booklet. Complementary drinks will be provided along with a substantial finger food buffet. Cash bar available until 22.30.

Monday, April 19, 2004

07.50 – 08.00 Gathering at Te Papa Tongarewa Main Entrance before Powiri Commences

08.00 – 09.00 Powiri followed by Refreshments (see detailed Powiri schedule above and glossary which appears at the end of the Programme)

09.00 – 09.30 Refreshments, Registration and Programme/Abstract book Pickup

09.30 – 09.50 Conference Welcome by the Honourable Pete Hodgson, Minister for Crown Research Institutes and Minister for Science, Research and Technology

09.50 – 10.30 Keynote Speaker
JAMES EHLERINGER: Forensic applications of stable isotope analyses

10.30 – 11.50 Session 1 - Food for Thought (Chair: Donald Phillips)

10.30 – 10.50 TIMOTHY, D. JARDINE: Analytical error in stable isotope ecology

10.50 – 11.10 JUDITH SEALY: Reconstructing diet among coastal hunter-gatherers: some issues in stable isotope analysis

11.10 – 11.30 JOEL TREXLER: Experimental test of the effects of omnivory on carbon and nitrogen isotopic labels

11.30 – 11.50 BLAKE MATTHEWS: Do stable isotopes weigh down the nichemetrician's toolbox?

11.50 – 12.20 Conference Photo

12.20 – 13.30 Lunch at The Wellington Brewery Bar and Restaurant

13.40 – 16.00 Session 2 – The Tissue Issue (Chair: Keith Hobson)

13.40 – 14.00 MARIE-ELODIE PERGA: Are you what you eat…all year long?

14.00 – 14.20 JOËLLE RICHARD: Estimating seasonal energy flow for two bivalve species: a carbon stable isotope diet switching experiment

14.20 – 14.40 JULIA GAYE-SIESSEGGER: Measuring enzyme activities can improve estimates for the trophic shift

14.40 – 15.00 ULFERT FOCKEN: Isotopic ratios of body lipids, lipid-free matter and chitin of the beetle *Tribolium castaneum* reared on different culture media

15.00 – 15.20 Tea/coffee

15.20 – 15.40 VALERY TERWILLIGER: How does the stage of development of a mouse affect its carbon and nitrogen isotopic composition following a change in diet?

15.40 – 16.00 D.M. O'BRIEN: Patterns of egg and tissue $\delta^{15}N$ enrichment during reproduction in insects with little adult protein intake: a model for starvation?

16.00 – 17.00 Session 3 – Microbial N Pathways (Chair: Zoe Crossman)

16.00 – 16.20 LORETO DE BRABANDERE: Temporal evolution of $\delta^{15}N$ in submerged leaf-biofilm complex: Importance of ambient river N as an N-source for decomposers

16.20 – 16.40 ANDREW T. REVILL: Carbon flow interactions between bacteria and microphytobenthos on a temperate mudflat – insights from bulk and compound-specific isotope analysis

16.40 – 17.00 ROBIN SUTKA: Intramolecular distribution of nitrogen isotopes (isotopomers) as a basis for differentiating microbial N_2O production pathways

17.00 – 19.00 **Poster Session: Complementary drinks and nibbles kindly sponsored by ThermoFinnigan**

Tuesday, April 20, 2004

08.50 – 09.00 Notices: Morning session begins

09.00 – 10.20 Session 4 – Fish habitats (Chair: Chris Harrod)

09.00 – 09.20 JANE C. MARKS: Applications of stable isotopes to conservation: assessing threats and setting restoration targets

09.20 – 09.40 RUSSELL FREW: Habitat-specific nitrogen dynamics in New Zealand streams containing native or invasive fish

09.40 – 10.00 JOSEPH SHANNON: Site fidelity of tributary caught native and alien fish along the Colorado River in Grand Canyon National Park

10.00 – 10.20 R.A. CUNJAK: Using stable isotope analysis and biotelemetry to study fish movement and foraging

10.20 –10.40 Tea/coffee

10.40 – 12.20 Session 5 – Primary Production (Chair: Warwick Sylvester)

10.40 – 11.00 MATTHIAS CUNTZ: Review the use of d $\delta^{18}O$ in atmospheric CO_2 to separate photosynthesis from respiration

11.00 – 11.20 JOHN D. MARSHALL: Estimating photosynthetic quantum yield from temperature and stable carbon isotope ratio

11.20 – 11.40 NATHANIEL E. OSTROM: Evaluation of primary production and community respiration in aquatic environments based on $\delta^{18}O$-O_2 and δO_2/Ar

11.40 – 12.00 BRIAN N. POPP: Controls on carbon isotopic fractionation in marine microalgae

12.00 – 12.20 SCOTT NODDER: Insights into the vertical transfer of organic matter by zooplankton in subtropical and subantarctic waters using stable isotopes

12.20 – 13.30 Lunch at The Wellington Brewery Bar and Restaurant

13.40 – 14.40 Session 6 – Aquatic Foodwebs (Chair: Joseph Shannon)

13.40 – 14.00 CHRIS HARROD: Discriminative powers of stable isotope analyses to reveal ecological plasticity in a myxohaline population of European eel

14.00 – 14.20 CHRISTOPHER G. McBRIDE: Food webs in relation to trophic status and morphometry of the Rotorua lakes: a stable isotope study

14.20 – 14.40 JON GREY: Chironomids as conduits of chemosynthetic production through aquatic food webs

14.40 – 15.00 CHRISTOPHER CORNELISEN: Isotopic variation in Ulva lactuca within a New Zealand fjord: interactions between physical gradients, nutrient source pools and productivity

15.00 – 15.20 Tea/coffee

15.20 – 17.00 Session 7 – Avian Migration (Chair: Leonard Wassenaar)

15.20 – 15.40 GABRIEL J. BOWEN: Annual and seasonal distribution of stable water isotopes in precipitation and their relevance to animal migration studies

15.40 – 16.00 KEITH HOBSON: Isotopic investigation of feathers and claws of white-throated sparrows: Delineating catchment areas of a migration monitoring station

16.00 – 16.20 ADRIAN FARMER: Identifying South American wintering sites of migratory shorebirds: a case for multiple stable isotope and trace element analyses

16.20 – 16.40 STUART BEARHOP: Segregation of breeding Blackcaps *Sylvia atricapilla* with respect to wintering area and its potential consequences

16.40 – 17.00 JULIO MANUEL NETO: Using stable isotope analysis to determine the winter moult extent in migratory birds: the complex moult of Savi's Warbler

17.00 Afternoon session ends

18.30 Conference dinner drinks/nibbles at the Overseas Terminal

19.30 Dinner served

Wednesday, April 21, 2004

Field trips

Thursday, April 22, 2004

08.50 – 09.00 Notices: Morning session begins

09.00 – 10.20 Session 8 – Apex Predators (Chair: Stuart Bearhop)

09.00 – 09.20 DONALD L. PHILLIPS: Source aggregation in stable isotope mixing models: lump it or leave it?

09.20 – 09.40 ERIN URTON: Isotopic source partitioning: insight into predation patterns in the Boreal forest of Canada

9.40 – 10.00 CHRIS T. DARIMONT: Facts from faeces; stable isotope analysis of survivors and non-survivors under the risk of predation

10.00 – 10.20 RONA A.R. McGILL: Dietary plasticity of the apex predators in an Antarctic ecosystem

10.20 – 10.40 Tea/coffee

10.40 – 12.20 Session 9 – Paleoecology (Chair: Judith Sealy)

10.40 – 11.00 LORNA T. CORR: A novel marine dietary indicator utilising compound-specific bone collagen amino acid $\delta^{13}C$ measurements of ancient humans

11.00 – 11.20 MARK COPLEY: Short- and long-term changes in the diet of domesticated animals from Qasr Ibrim, Egypt

11.20 – 11.40 SETH D. NEWSOME: Historical foraging ecology of northern fur seals (*Callorhinus ursinus*): an annual $\delta^{13}C$ and $\delta^{15}N$ time series derived from canine teeth

11.40 – 12.00 KENA FOX-DOBBS: Dietary niches within the Rancho La Brea raptor and vulture guilds

12.00 - 12.20 M.J. WOOLLER: Stable Oxygen isotope analyses of chironomid head capsules preserved in arctic lake sediments – paleoenvironmental implications

12.20 – 13:30 Lunch at The Wellington Brewery Bar and Restaurant

13.40 – 15.00 Session 10 – Applying Oxygen Isotopes (Chair: Brian Popp)

13.40 – 14.00 LEONARD I. WASSENAAR: Stable isotope composition of O_2 in the aquatic environment

14.00 – 14.20 YOUPING ZHOU: *a*-cellulose – lignin linkage in plant material and its implications for dendroclimatological and physiological studies using oxygen isotopes

14.20 – 14.40 TRICIA STADNYK: Modelling stable isotope tracers in the environment

14.40 – 15.00 EVA BANTELMANN: Stable C and O isotopes reveal the effects of land use on the carbon fluxes in mountainous ecosystems

15.00 – 15.20 Tea/coffee

15.20 – 17.00 Session 11 – Plant Physiology (Chair: James Ehleringer)

15.20 – 15.40 J. RENÉE BROOKS: Hydraulic redistribution in the Pacific Northwest: tweaking the system

15.40 – 16.00 M.M. BARBOUR: $\delta^{13}C$ of respired CO_2 reflects $\delta^{13}C$ of recently fixed photosynthate in Nothofagus forests

16.00 – 16.20 LOUISE C. ANDRESEN: Off-season uptake of nitrogen in temperate heath vegetation

16.20 – 16.40 WARWICK B. SILVESTER: Extreme isotopic depletion of ^{15}N in terrestrial algae and lichens implicates diffusive uptake of N

16.40 – 17.00 R. McKANE: Functional overlap of root systems in an old-growth forest inferred from tracer ^{15}N uptake.

17.00 Afternoon session ends

Friday, 23 April, 2004

08.50 – 09.00 Notices: Morning session begins

09.00 – 10.20 Session 12 – Precipitation Signals (Chair: Gabriel Bowen)

09.00 – 09.20 RICHARD N. HOLDAWAY: Evidence for a precipitation signal in levels of enrichment of ^{15}N in two New Zealand birds

09.20 – 09.40 E.C. FEBRUARY: Hydrogen and Oxygen isotopes of water from trees on the west coast of Africa reflect an east coast origin

09.40 – 10.00 KEIRITH A. SNYDER: The effects of altered precipitation patterns on ecosystem responses in a desert rangeland

10.00 – 10.20 BRUCE A. HUNGATE: Nitrogen isotope composition of soil microbial biomass: integrator of ecosystem N cycling?

10.20 – 10.40 Tea/coffee

10.40 – 12.20 Session 13 – Fate of Soil Carbon (Chair: Andrew Revill)

10.40 – 11.00 CLAIRE EVANS: Tracing carbon flow into individual soil invertebrates by $^{13}CO_2$ pulse labelling

11.00 – 11.20 ZOE M. CROSSMAN: $^{13}CO_2$ pulse labelling and analysis of microbial communities in soils under two different grassland plant species

11.20 – 11.40 DAVID D. MYROLD: Tracing carbon through the soil microbial community during ryegrass decomposition

11.40 – 12.00 JENNI, A.J. DUNGAIT: Using natural abundance $\delta^{13}C$ to investigate dung carbon input to soils and soil microbial population dynamics

12.00 – 12.20 ANDREW J. RAWLINS: Tracking carbon transfer from decomposing invertebrate faeces; the fate of faecal carbon in the soil

12.20 – 13.30 Lunch at The Wellington Brewery Bar and Restaurant

13.40 –15.00 Session 14 – Tracing and Tracking in Estuaries (Chair: Russel Frew)

13.40 – 14.00 THOMAS A. SCHLACHER: Fish track wastewater pollution to estuaries

14.00 – 14.20 BJÖRN WISSEL: Tracing the Mississippi River floodprint in estuarine consumers in coastal Louisiana

14.20 – 14.40 ROD CONNOLLY: Scales of carbon movement and assimilation by invertebrates in estuaries

14.40 – 15.00 P.-G. SAURIAU: Tracing pelagic versus benthic food sources to cultivated blue mussel Mytilud edulis L. on SW France with stable carbon and nitrogen isotopes

15.00 – 15.20 Tea/coffee

15.20 – 16.00 Session 15 – Exotic Environments (Chair: Thomas Schlacher)

15.20 – 15.40 MARIE-NOËLE CROTEAU: Stable metal isotopes reveal copper accumulation and loss kinetics in the freshwater bivalve *Corbicula*

15.40 – 16.00 HELENE LIMÉN: The role of meiofauna at deep sea hydrothermal vents

16.00 – 16.20 Student Presentations

16.20 – 16.30 Windup

16.30 Conference Ends