



International Nutrient Inter-Comparison: Newsletter #6

Keep up to date on the facts, plans and people involved with the International Nutrient Inter-Comparison voyage (INIV) scheduled for May 2022

Photo: Sunset CTD. CSIRO, Max McGuire

INIV is an opportunity for global nutrient chemists to come together to gain first-hand knowledge and experience of measuring nutrients in the ocean.

The goal of this voyage is to enhance peer to peer communication while tackling a broader understanding of time-scale nutrient changes for the oceanographic community.

Welcome

Welcome to the sixth INIV newsletter. Here we present some of the Q&A data that we have received from those that have participated in the [Expression of Interest \(EOI\) surveys](#).

What's happening

Our project team continues to work with the Marine National Facilities around planning and logistics of the voyage. Here is a quick summary of activities taking place in Hobart, Tasmania:

- We are currently reviewing the Covid-19 risk assessment and voyage impacts to delivery.

- A review of the ship laboratory space indicates that there is adequate space to accommodate all EOI laboratories across 3 large laboratories and space for 2 containerized facilities.

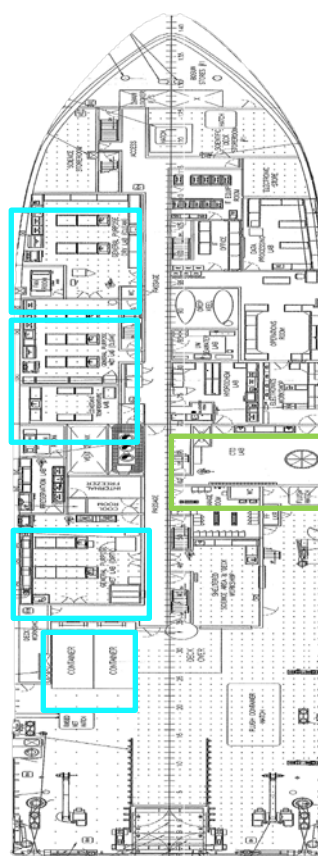


Figure 1: Layout of RV Investigator laboratory space; blue circles indicate space allocated to nutrient laboratories and green indicates CTD laboratory

- Formal invite letters are currently being drafted for all participants that plan to bring instrumentation on the voyage.
- We have started to draft the participants manual for the voyage in preparation for an upcoming participant's video call to be scheduled for Oct/Nov.
- Additionally, we continue to assess our timeline for funding opportunities and support participants in their applications for funding.

EOI – Nutrient Q&A

Standard operating procedures for nutrient analysis are detailed with many small pieces to build the full puzzle. The primary objective of this voyage is to identify best practices for nutrient measurement at sea and identify if there are any identifiable factors that improve nutrient comparability. Over the course of this project, the team has collected various metadata from the EOI participants list around standard operating procedures (n ≈ 23). A subset of that information is presented here and shows while some of the charts have majority consensus – instrumentation (majority Seal) and not forcing the calibration curve through zero - other areas are split more evenly - matrix, matrix correction and refractive index correction. The majority of respondents use a seawater matrix but it's almost 50/50 as to the source of water used.

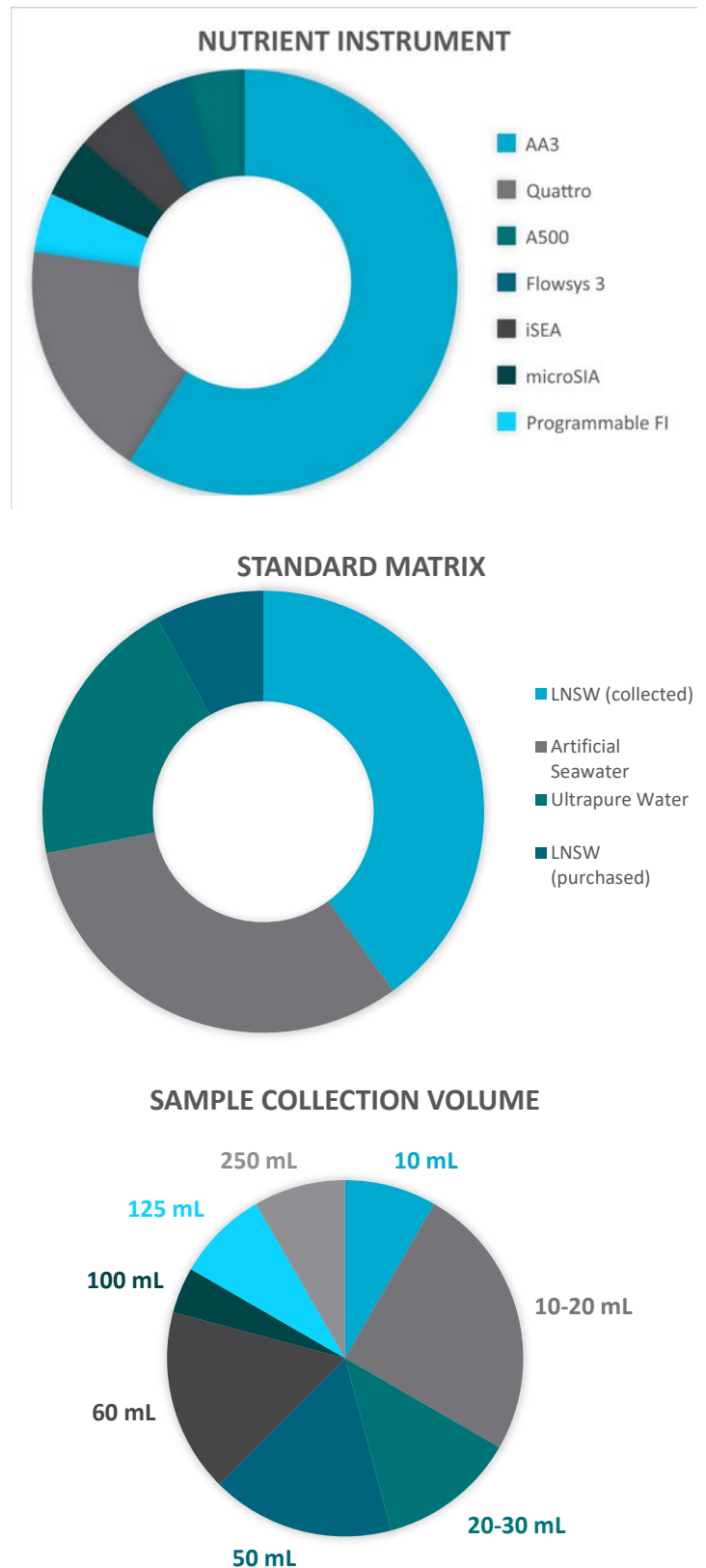


Figure 2: The 3 plots above represent information collected from the EOI laboratories regarding nutrient analysis.

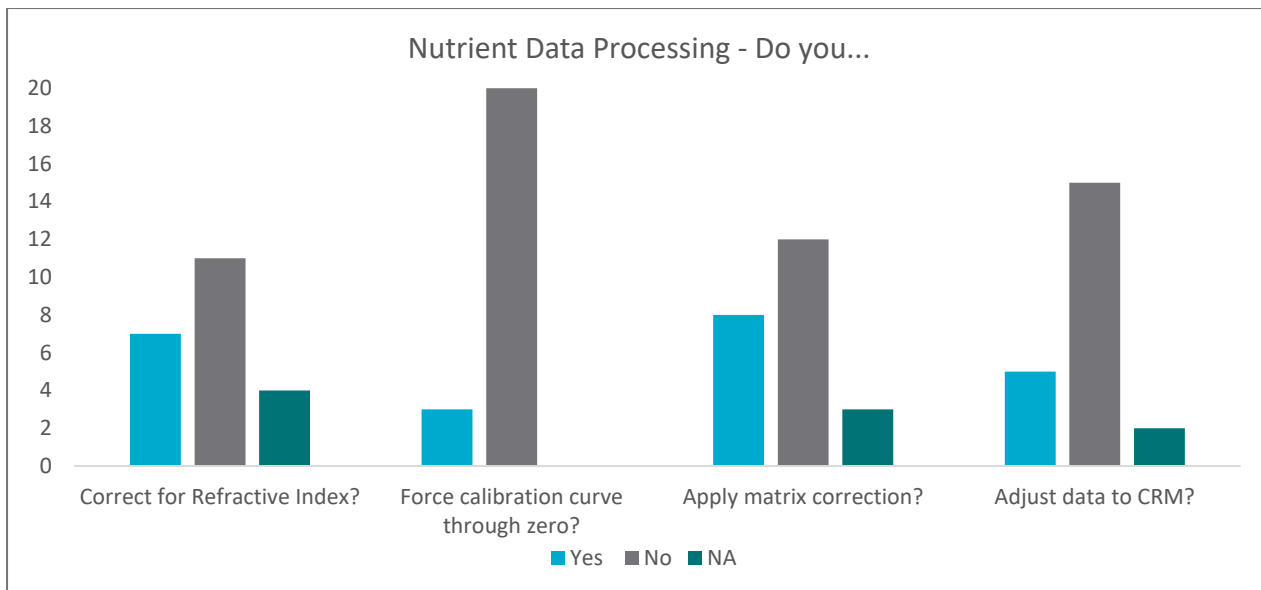


Figure 3: Nutrient data processing Q&A results

What are your initial reactions to this data? We would like to start a conversation around these small variations. What factors would you like to see plotted? What questions would you like to ask? Join the conversation by sending us a message – everyone that responds will be entered to win a piece of voyage merchandise – iniv2022@csiro.au.

Nutrient Analysis at Sea

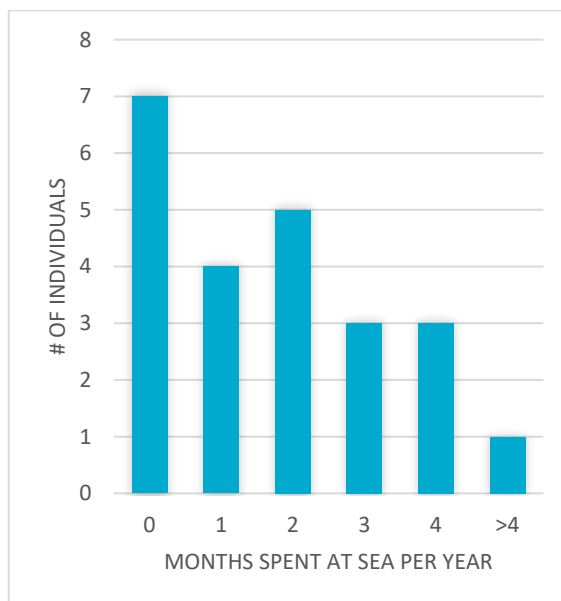


Figure 4: Annual sea time per individual from EOI Q&A

We also surveyed the EOI participants regarding shore and ship-based work. Over 50% of the respondents analyse nutrients at sea with 13 laboratories contributing data to long term data sets (global and local).



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SEAL Webinar Series: Troubleshooting Colorimetric Determination of NO₃ + NO₂
 Wednesday, Sept 29th
 9:00 – 10:30 am CDT

Thursday, Oct 7th
 3:00 – 4:30 pm CDT

Tuesday, Oct 19th
 9:00 – 10:30 am CDT



[REGISTER HERE](#)

Participant Bios



Name: Christine Rees

Role: Senior Hydrochemist

Organisation: CSIRO

Total days at sea: 407 days, 368 of these onboard RV Investigator.

Favourite Voyage: My very first voyage on board Aurora Australis to Commonwealth Bay Antarctica to celebrate Mawson's centenary and repeat observations on the I9S hydrographic reference line. Seeing Antarctica for the first time was amazing. However, professionally the 2 most satisfying voyages were in2016_v03 and in2018_v01, these were CTD voyages where we made repeat observations on the GO-SHIP lines P15S and SR3/P11/S4.

INIV: I have spent most of my life analysing nutrients. My first job in 1993, I analysed freshwater samples on projects in the Darling River and Chaffey dam. My second job I predominately measured nutrients in the Bays and Inlets of Victoria. With CSIRO, I've had the opportunity to analyse nutrient samples from all around Australia and Antarctica either on board RV Investigator or in our shore laboratory. After all this time, I know I can learn more and improve the analysis of nutrients. I love engaging with other researchers and learning from them, the methods they use and how they process their data. INIV will be a great opportunity for everyone to learn from each other. I hope we can determine why there are still discrepancies between data sets from different laboratories.



Name: Maxime Grand

Role: Assistant Professor

Organisation: Moss Landing Marine Laboratories - San Jose State University

Total Days at Sea: 363 on various Research Vessels

Favourite Voyage: Hard to pick as I loved every single one of them! I think the trip that impacted me the most was my first cruise on the RV Roger Revelle in the Southern Indian Ocean. We left from Dunedin New Zealand, sailed until the edge of Antarctica and steamed back to Perth, Australia 50 days later. During this voyage, I saw my first icebergs, penguins, auroras, never ending sunsets and experienced 50 knot winds and heavy seas, which, oddly enough, I thoroughly enjoyed! On this trip I analyzed dissolved Fe and Al using a custom FIA analyzer on the I08S line and used this dataset to complete my PhD. When I returned on land, I was hooked! I had obtained confirmation that an oceanographic career was highly rewarding and, more importantly, extremely fun!

What interests you most about INIV: The opportunity to network and brainstorm with the international nutrient community while all at sea analyzing the same samples so we can identify the origin and correct discrepancies between labs/analysts. This voyage is also a fantastic opportunity for our lab to intercompare and improve our newly developed microfluidic analyzers for N, P and Si analysis.

Voyage Website

We have a website! Check it out for additional information about our voyage including voyage location, planning, getting involved, FAQ and more: <https://wp.csiro.au/iniv2022/>

Contact Us

Please feel free to reach out to the CSIRO Hydrochemistry team at any time during the planning process – iniv2022@csiro.au



The RV Investigator from above.
Photo: CSIRO, Owen Foley

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For further information

Hydrochemistry – National Collections and Marine Infrastructure (NCMI)

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