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INSTITUT DE SCIENCES  
EXACTES ET APPLIQUÉES

## Pacific Earth Observation

List of operational systems recently and currently implemented  
by the UNC for freshwater quality monitoring

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# ❖ The University of New-Caledonia



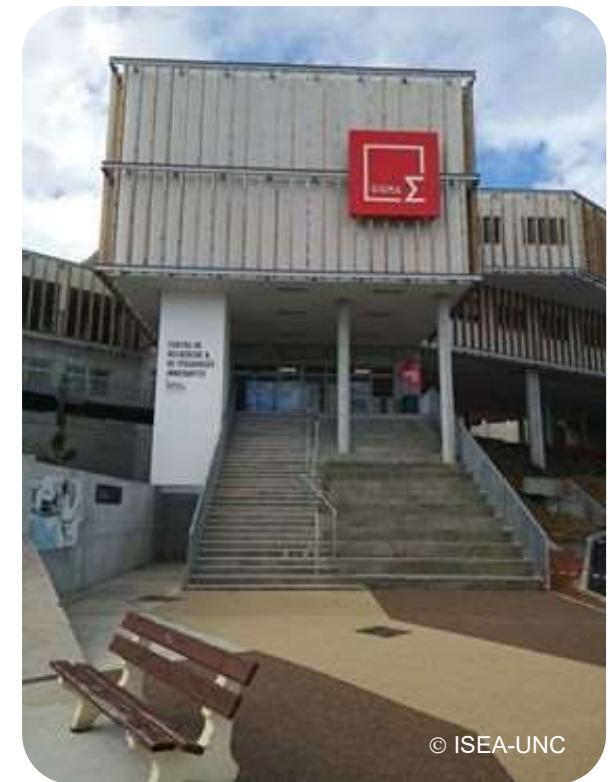
New campus at Baco (Koné)



Main campus at Nouville (Nouméa)

## ❖ The Institute of Exact and Applied Sciences

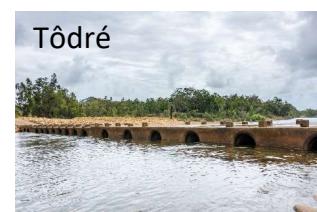
- 30 researchers
- Several academic fields : mathematics, geology, physics, chemistry, biology, and computer sciences
- Scientific project: understand the functioning and evolution of the terrestrial and coastal environment in tropical surroundings
- 1500m<sup>2</sup> of laboratory space in the sigma building



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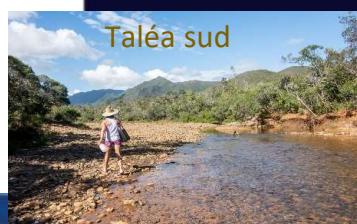
## ❖ Recently freshwater quality monitoring

The QUAVAR Project : **Freshwater quality and effluent's threshold values for ultramafic catchment basin**  
 The aim of the project is to define a freshwater baseline for Ni, Co, Cr, Fe, Mn and As, that are specific to ultramafic substrates.  
 ⇒ Collection of existing data  
 ⇒ Monitoring of 5 rivers every 2 weeks for 1 year + few measurements for 7 rivers in the north



### Parameters

*In situ:* pH, O<sub>2</sub> dis., EC  
 Au laboratoire : MES, COD (COT mètre), NO<sub>3</sub><sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, PO<sub>4</sub><sup>3-</sup>, Cl<sup>-</sup>, Br<sup>-</sup>, I<sup>-</sup>, HCO<sub>3</sub><sup>-</sup>/CO<sub>3</sub><sup>2-</sup>, CrVI (Chromatographie ionique, Metrohm), Ca, Mg, Na, K, Ni, Cr, Fe, Mn, Co, As, Al, Ti, Pb, Cd, Cu, Zn, Bi, Ag dans le total et le dissous (<0,45µm nitrate de cellulose) (ICP-OES Varian 730 ES)



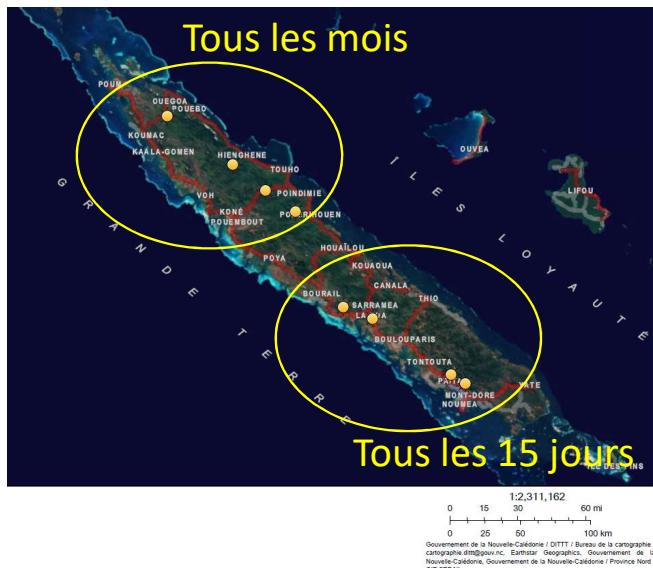
Funded by CNRT  
 Nickel and its  
 environment

## ❖ Currently freshwater quality monitoring

The REF'EAU-NC Project : reference values for rivers in New-Caledonia

⇒ exploitation of the DAVAR database

⇒ Monitoring of 4 rivers every 2 weeks for 1 year + 4 rivers every months



4 cours d'eau en province nord (**UNC**)

- Tiwaka (HER G, formation géologique mixte)
- Tchamba (HER G, volcano sédimentaire)
- Hienghène (HER F, volcano sédimentaire)
- Diahot (HER C, volcano sédimentaire)

4 cours d'eau en province sud, HER B (**DAVAR**)

- Carignan (mixte)
- Dumbéa (mixte, influence agricole et anciennes mines)
- Nessadiou (volcano sédimentaire, influence agricole)
- La Foa (volcano sédimentaire, influence agricole)

### Parameters

*In situ*: pH, O<sub>2</sub> dis., EC

Au laboratoire : MES, COD (COT mètre), NO<sub>3</sub><sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, PO<sub>4</sub><sup>3-</sup>, Cl<sup>-</sup>, Br<sup>-</sup>, I<sup>-</sup>, HCO<sub>3</sub><sup>-</sup>/CO<sub>3</sub><sup>2-</sup>, CrVI (Chromatographie ionique, Metrohm), Ca, Mg, Na, K, Ni, Cr, Fe, Mn, Co, As, Al, Ti, Pb, Cd, Cu, Zn, Bi, Ag dans le total et le dissous (<0,45µm nitrate de cellulose) (ICP-OES Varian 730 ES)

Funded by OFB and  
DAFE with the  
support of DAVAR



## ❖ The following

Diversité Project: Understanding, preserving and promoting the diversity of tropical socio-ecosystems  
2024-2031 in a context of global change

Funding 14,9 M €

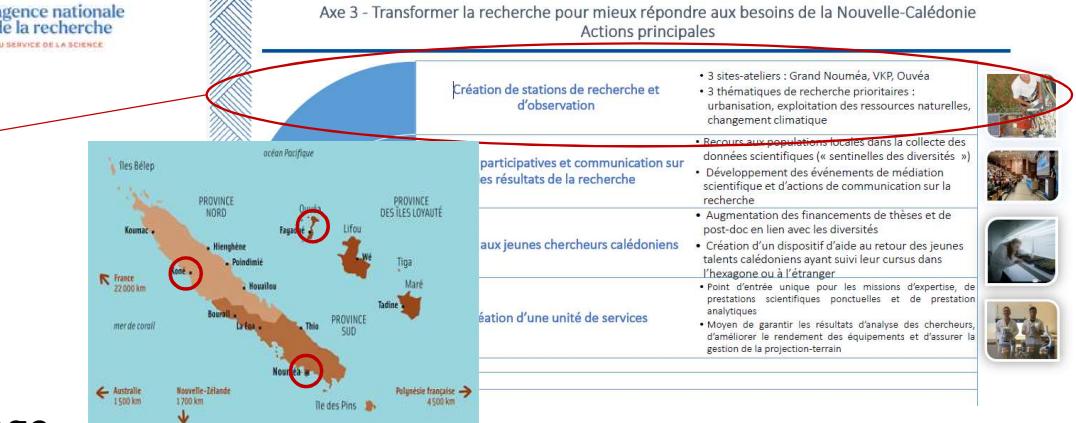


Appel à  
projets  
**ExcellenceS**

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de la recherche  
AU SERVICE DE LA SCIENCE

### Creation of research and observation stations

- 3 sites Nouméa city and its surroundings  
VKP, North west area  
Ouvéa Island
- 3 priority research topics : urbanization, exploitation of natural resources and climate change





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# Thank you for your attention

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