

Water quality survey of Lake Akrotiri

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Water Quality
Survey of Lake Akrotiri



Water chemistry surveys

Water quality surveys to identify potential pollution sources and lake biogeochemical processes

Pre-Covid plan

- Regular surveys through seasons
- Chlorophyll and algal characterisation to link with remote sensing

One full survey of lake and inputs (8 sites) – July 2019



Water chemistry surveys

Water quality surveys to identify potential pollution sources and lake biogeochemical processes

- One full survey of lake and inputs (8 sites) – July 2019
- 6 additional surveys by JSHU at sites 1, 5 and 7 (inputs to lake) between Sept 2019 to Nov 2020.



Water chemistry surveys

Water quality parameters

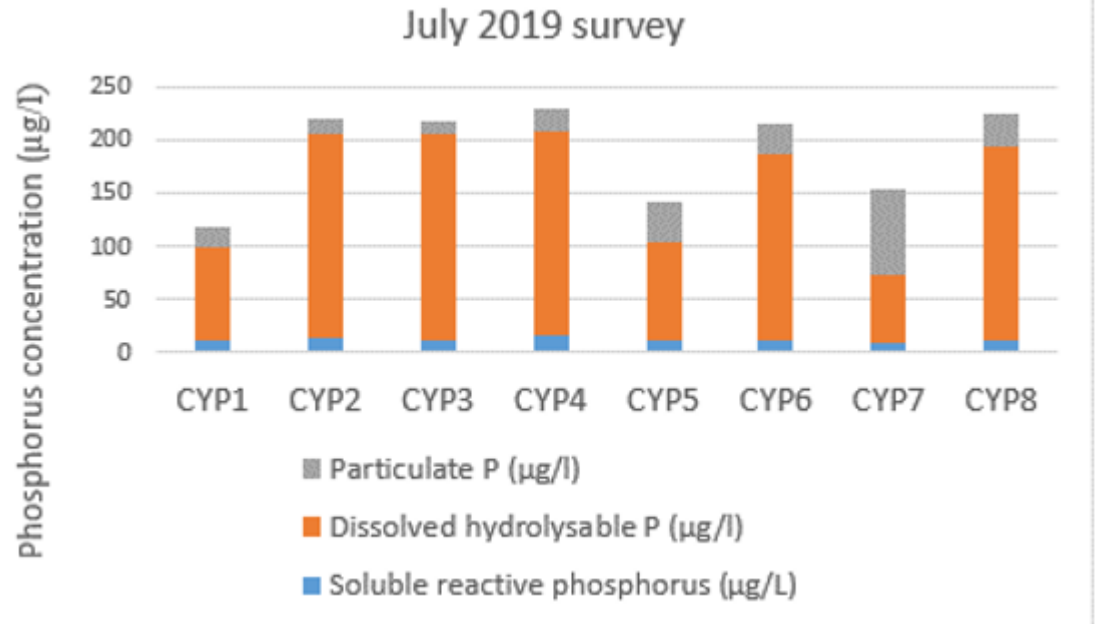
- Phosphorus species (total P, total dissolved P and soluble reactive P)
- Nitrogen species (Nitrate, nitrite, ammonium)
- Dissolved silicon
- Suspended solids
- Conductivity
- Chlorophyll

Plus hand-held meters

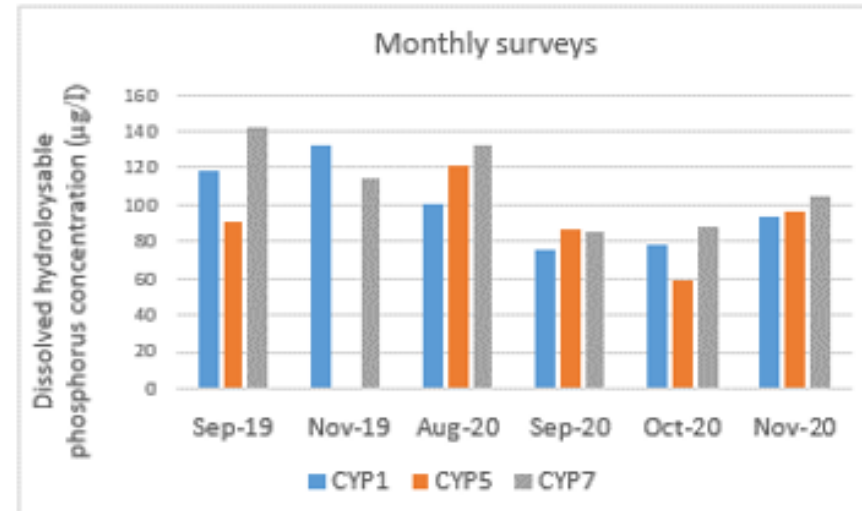
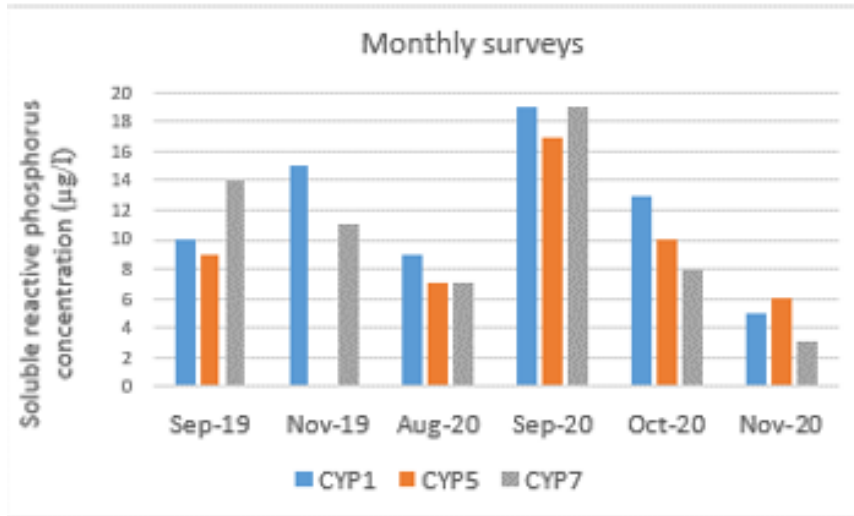


Phosphorus speciation

- All sites dominated by organic phosphorus.
- P concentrations higher in lake than in input channels
- Suggests high productivity in lake



Phosphorus speciation



- Not much seasonal pattern in channel P concentrations
- Diffuse inputs, rather than point source?

Nitrogen speciation

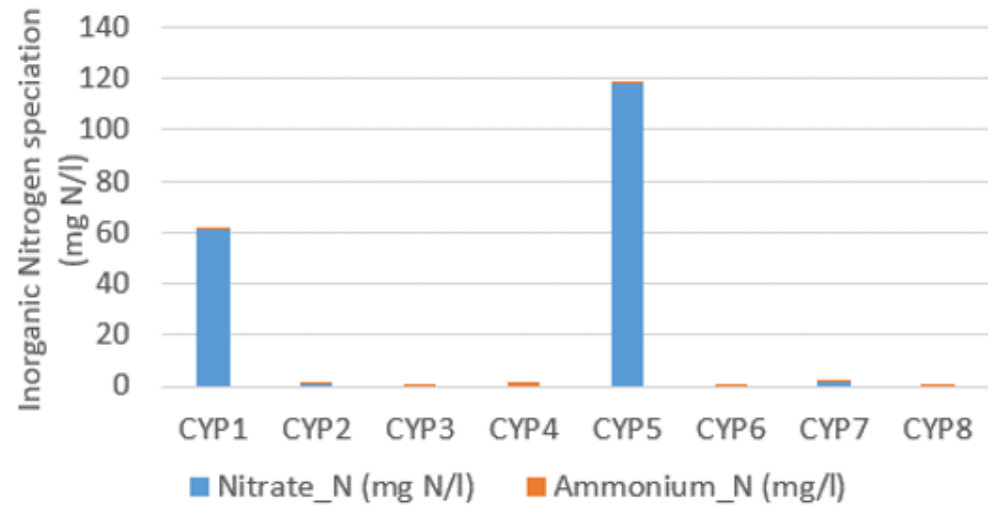
Channel inputs high in nitrate

- Seawater intrusion?

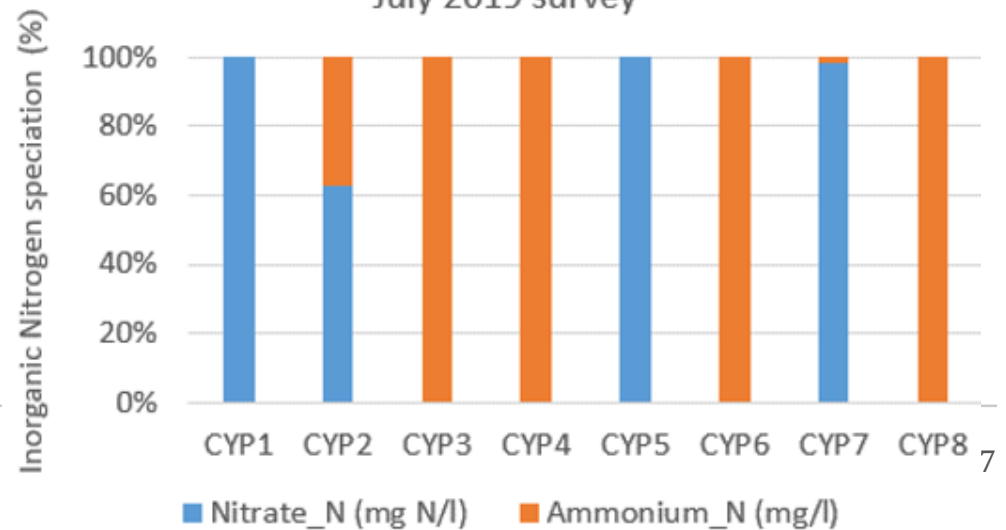
Lake nitrogen in form of ammonium

- pH?
- Low oxygen?
- Assimilation of nitrate by lake biota, and converted to ammonium due to decomposition?

July 2019 survey



July 2019 survey

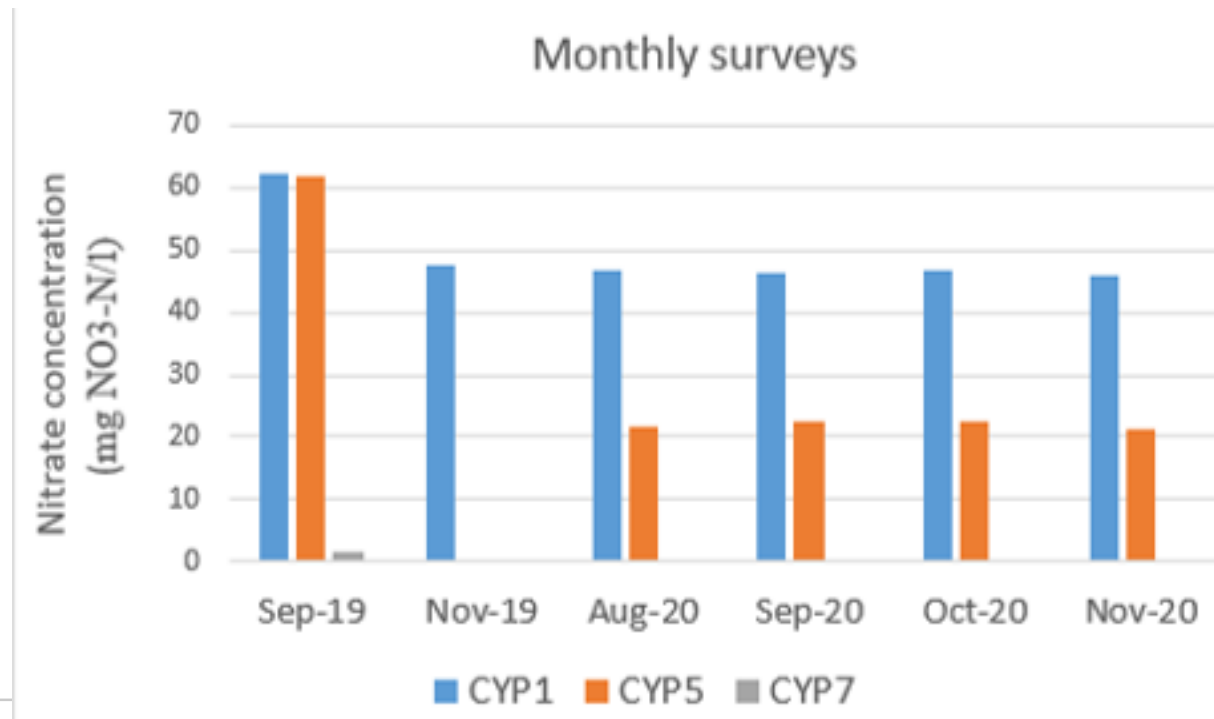


Nitrogen speciation

CYP 1 and 5 inputs always high in nitrate

Very consistent pattern

- Seawater intrusion in eastern side of lake catchment?

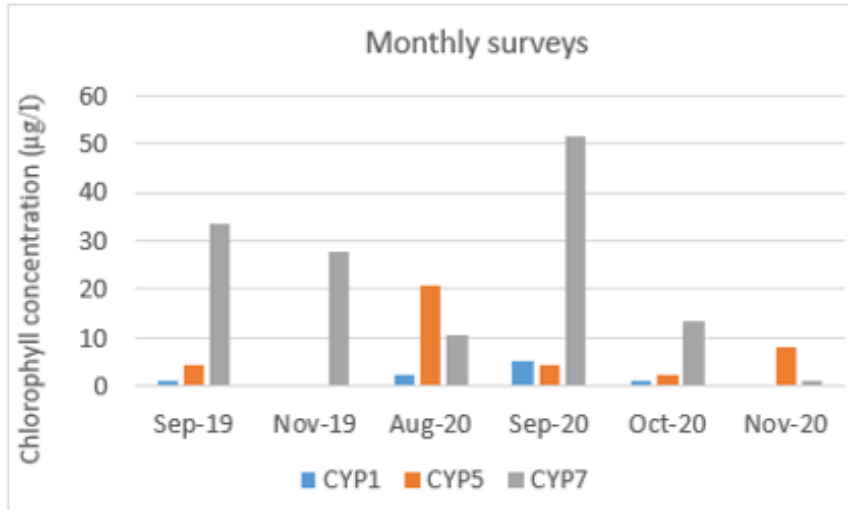
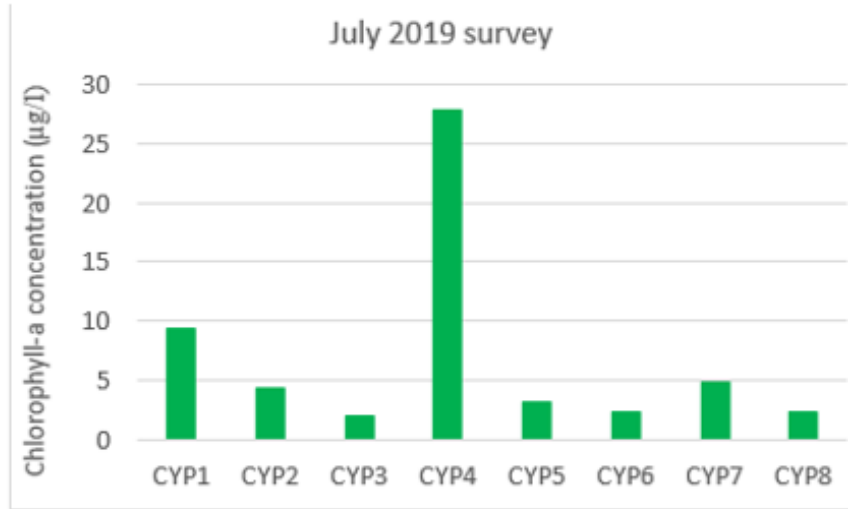


Chlorophyll

High chlorophyll concentration in East of lake

High concentrations in channels CYP7 and CYP5.

- Low flows?
- Dead-zones and ponding?



Thank you