

Accessing PostgreSQL PostGIS with Python

Introduction

This page is dedicated to the VECTORS workshop in Portorož, Slovenia. The method provided creates a subset of data (points) for a specific ICES square and plots a sequence of values (chlorophyll).

Datasource:

- postgres03.xtr.infra.deltares.nl (database name = ICES, username = dbices, password = vectors) (!!privileges are read-only!!)

Necessary modules:

- matplotlib.pyplot (comes with python(xy))
- psycopg2 (<http://www.stickpeople.com/projects/python/win-psycpg/psycpg2-2.4.4.win32-py2.7-pg9.1.2-release.exe>)

The snippet

Please note that if you are using the code, the indents are very important in Python.

```
# Description: Use of psycopg2 module to query database ICES
# -----

# import modules
import psycopg2
import matplotlib.pyplot as plt

# create connection to ices database
conn = psycopg2.connect("dbname=ICES host=postgres03.xtr.infra.deltares.nl user=dbices password=vectors")

# create a cursor object called cur
cur = conn.cursor()

# construct a query string
strSql = """
select year,month,to_number(day, '9999'),cphl
from ocean
where (select st_within(the_point,the_geom) from icesquares where statsq = '31F2')
and cphl IS NOT NULL and sdepth < 10 and year = 2003
order by year,month,day,cphl
"""

# execute the query
cur.execute(strSql)

# store the result of the query into Tuple c
c = cur.fetchall()

# closes the connection
conn.close()

# now store day and avg(cphl) in two separate arrays
cphl = []
days = []

for i in range(len(c)):
    days.append((c[i])[2])
    cphl.append((c[i])[3])

# plot the
plt.xlabel('days')
plt.plot(cphl)
plt.show()
```

The entire snippet can be downloaded as [python code](#). Please try out and adjust to your needs and of course share it with the OpenEarth community. You are challenged to share your modifications.