Russian Monitoring System in 2013

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STATE OCEANOGRAPHIC INSTITUTE (SOI)

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Russian state monitoring system of the Black sea

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Tuapse Water Monitoring 2013
Roshydromet monitoring data
Anapa, Novorossiysk, Gelendghik, Tuapse, Sochi

1. Period January - December
2. Number of stations 2012 = 20
3. N records 88

Standard hydrochemistry and pollution:
Oxygen, Phosphates, Ammonia, Nitrites, Silicates, TPHs, Detergents, Pesticides, Mercury
Long-Term Dynamics of Annual Maximal Concentrations of Phosphates P-PO$_4$ (µg/dm³)
Annual Average dynamics of Nitrites N-NO$_2$ ($\mu$g/dm$^3$)

\[ y = 6.1648e^{-0.0518x} \]
Annual Average dynamics of Ammonia N-NH$_4$ (µg/dm$^3$)

Annual dynamics of maximum Ammonia N-NH$_4$ (µg/dm$^3$)
Annual Average and Maximum Concentration of Total Petroleum Hydrocarbons (mg/dm³)
Sochi Water Monitoring 2013
Special Center on Hydrometeorological and Environmental Monitoring of the Black and Azov Seas

SCHME BAS: 354057 Krasnodar Region, Sochi, Sevastopolskaya 25

1. Number of cruises performed during the year 4 Seasons

2. Number of stations (sampling points) 8

3. N records 88

4. Parameters

Standard:
Temperature; Salinity; Transparency (Disk Secchi, m), Conductivity, Chlorinity, Dissolved oxygen, ml/dm3; Dissolved oxygen, Percentage of saturation; BOD5 (ml/dm3); Hydrogen ion concentration (pH); Eh (mB), Alk (mg-mol/dm3),

Nutrients: Non-organic phosphorus (phosphates PO4); Phosphorus total; Ammonium NH4; Nitrite N-(NO2); Nitrate N-(NO3); Nitrogen total; Silicate;

Pollution:
Iron (μg/dm3), Lead (μg/dm3), Mercury, μg/dm3, Chlorinated pesticides: DDT, DDD, DDE, α-HCH, β-HCH, γ-HCH, Thrifluralin; Detergents; Total petroleum hydrocarbons in water; Particles.
Seasonal changes of oxygen, mg/dm³
Sochi-Adler area
Long-term dynamics of average concentration of nutrients N-NO$_3$ and N$_{total}$
Ammonia concentration, μg/dm$^3$

$y = 0.9443x + 13.547$
Seasonal variation of total phosphorus, µg/dm³
Seasonal changes of silicate average concentration in the coastal waters of Sochi-Adler, $\mu g/dm^3$
Long-term dynamics of average concentration of Total Petroleum Hydrocarbons TPHs (mg/dm³)

\[ y = -0.0071 \ln(x) + 0.0616 \]
Dynamics for Adler-Sochi area
Sochi-Adler
Seasonal changes and average of mercury concentration, \( \mu g/dm^3 \)
Sochi-Adler
Seasonal changes and average of lead concentration, $\mu g/dm^3$
Sochi-Adler
Seasonal changes and average of iron concentration, µg/dm³
Conclusions

• Real long-term changes in some forms of nutrients
• Some decadal changes in pollutants
• Limit of the data from the open sea
• Minimum data on organic pollutants
• Complete absent of bottom sediment and biota data

• THANK YOU