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EFFECT OF SEASONAL VARIATION ON FRESH WATER BODIES OF ZARDALOO DISTRICT HARNAI AND KHANCHOGHAI DISTRICT MUSLIM BAGH BALOCHISTAN, PAKISTAN

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Abstract

Current work concentrate going on the seasonal difference inside the physico-chemical parameters of the rivers of Zardalo district Harnai and Kanchoghai district Muslim Bagh for one year from February 2017 to March 2018. A full amount of 08 parameters were examine and seasonal difference of 1 year is discussed. The data is represented as seasonal mean ± S.D with coefficient of variation. To know the quality of water and growth of this lake, physicochemical and biological parameters like temperature, total alkalinity, dissolved oxygen, total hardness, phosphate, silica was carried out monthly. far above the ground principles of physico-chemical parameters were experiential appropriate to the introduction of agricultural excess and irregular set free of dirt.

Key Words: Physico-chemical, Parameters, Kanchoghai, Zardaloo and Water Bodies.

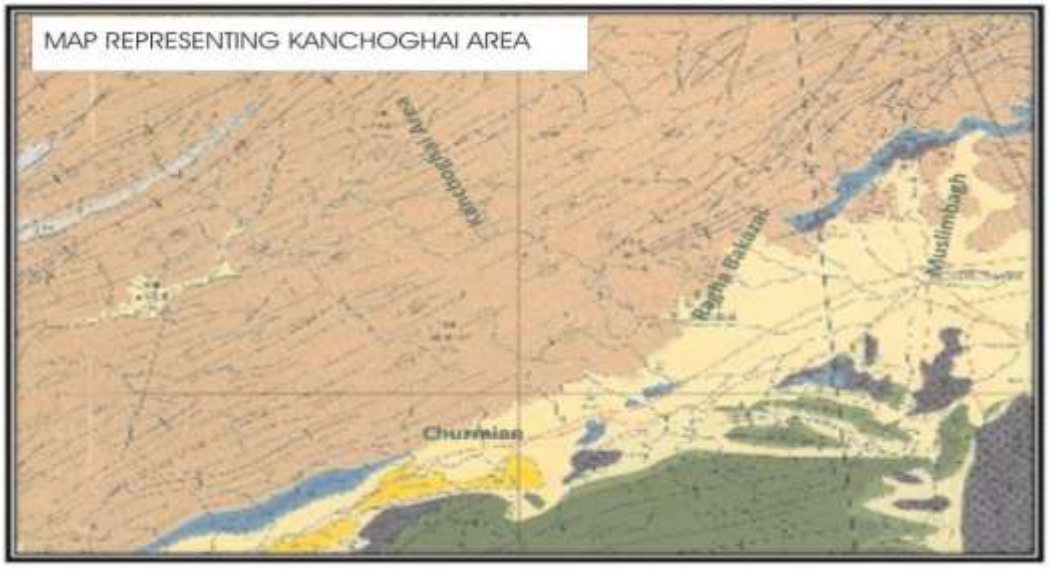
1. Introduction

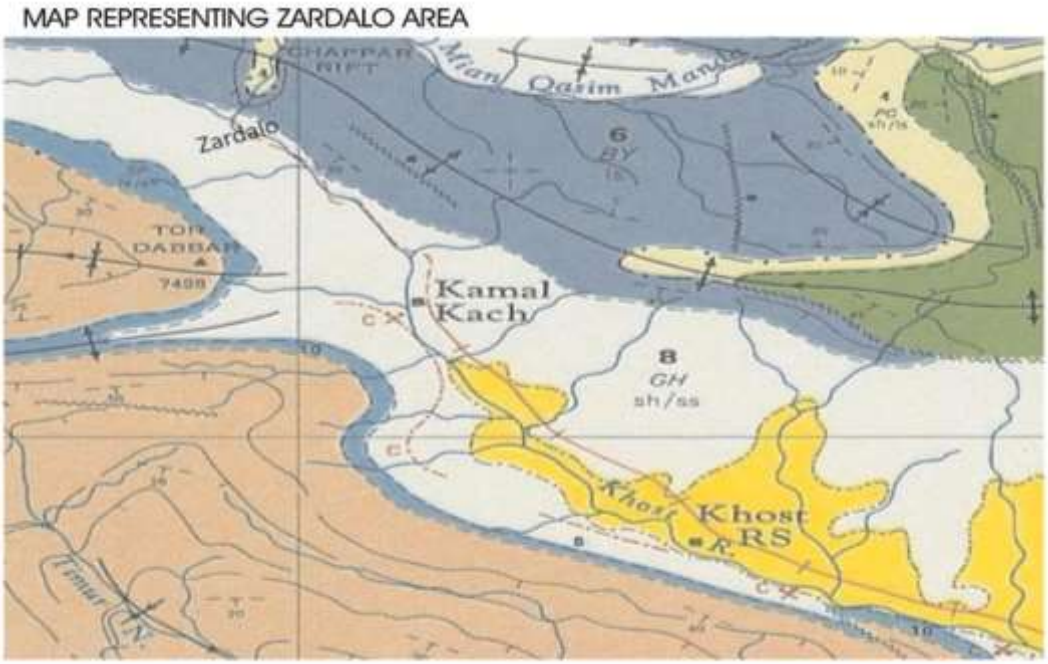
H2O is 1 of the in large quantities obtainable supply in environment, which man has oppressed extra than several resources for the survival of living. H2O of superior quality is obligatory for livelihood organisms. H2O excellence provide nearby location with reference to the awareness of various solutes at a specified position and occasion. H2O excellence parameters make available the foundation for analyses the suitability of H2O for it depute uses and to get better alive situation (Shinde, et al., 2011). protected and spotless H2O is essential for all imperative purposes' in every day livelihood, as well as food research ingestion and delicate hygiene (WHO 2011). current days ingestion clean H2O is scared suitable to dissimilar anthropogenic actions similar to discarding of industrial effluents chemicals from industries and other wastes these anthropogenic activities brings harmful substances to the water bodies effects worldwide Water borne diseases.

Soomro et al.,(2011). For greatest growth and organization for the valuable uses, at hand in sequence is compulsory which is provide by H2O quality programmers (LIoyd, 1992) There is broad work on hydrobiological studies on several water bodies in different regions of India.

(Anilkumar 2000) reported fresh water algae of Hassan district, (Trivedy and Goel 1986) reported the chemical biological methods for H2O pollution studies from various parts of (Maharashtra) further than (97%) occurs in the outline of sea ,whose salinity makes it ineffective, while fresh H2O makes up just 2.6% (Imtiyaz Tali, et al.,2012).

Fig.1. Map Representing Kanchoghai Area.





2. Material and Methods.

For the study of physico-chemical analysis water samples were collected fortnightly from the pond surface in a clean polythin container for the period of one year, from February 2017 to March 2018. Water samples were collected during morning hours in between 10.00 to 12.00 PM. water was collected 2 litter containers from the three sites of the pond. Few of the results were listed at the spot, the parameters detected were rigidity, Ca, pH, Mg, turbidity, phosphate, Su, Dissolved oxygen, sourness, alkalinity, Cl over weight and web main output and BOD. The different physico-chemical parameters were analyzed by subsequent the model methods of Trivedy and Goel (1984), (APHA) (1995). Turbidity was

calculated by ‘’secchi Disc’’ method. major efficiency was calculated using gloomy and daylight container method.

3. Study Area

Study area is based on two water bodies (Zardalo) District Harnai basin Nari river DargaiKhost Manda total hight (13.77) total length 700 (Kanchoghai) District Qila Saifullah basin Zhob Main Kanchoghai total Hight (14.55) total length (960) catchment area (6.55) storage capacity (250) Zardalo is situated about 110 km northeast of Quetta at Latitude 30 15 25.971 and Longitude 67 32 34.126. Kanchogai is situated about 130 km northeast of Quetta and 30 km northwest of Kan Mahtazai at Latitude 30 49 51.118 Longitude 67 34 9.581.

4. Results and Discussion

Water samples collected were analysed for physico-chemical parameters and statistical results are computed in table 1 and table 2.

Physical and Chemical Parameters

Temperature

The H2O temperature diverse with dissimilarity of season as least in wintry weather and maximum in heavy rain at position 1 (Kanchugae) ranges -1 and 26 as well as same values recorded for station 2 (Zardaloo) were -1 and 25 same results were recorded by (Lashari *et. al.*, (2009), Tidame and shinde 2012).

pH. pH of water samples of both stations were alkaline throughout the year with the range station 1 pH (7.1-7.9) and station 2 pH (7-7.9) (Mali and Gajaria 2004)

Dissolved Oxygen

Dissolved Oxygen in station 1 were recorded 5.2 and 10 mg/liter while in station 2 values lies in between 4.4 and 8.1 same values were recorded by Dastagir et al., (2014) according to him the amount of dissolved oxygen fluctuated between 5.0-9.2 mg/liter.

Turbidity

The ‘’Secchi disc’’ transparency (turbidity) shows that H2O is more turbid in heavy rain and smallest amount turbid in wintry weather according to (Kedar at. al., 2008). values at section 1 were in between 3 and 33.5 (NTU) and at station 2 values lies 2 and 28.6 (NTU)

Total Dissolved Solids (TDS)

Total dissolved solids (TDS) it can be explained as the quantity of material dissolved in water. TDS shows the amount of salts dissolved in water. Salinity affects the quality of water which has unfavourable effects on aquatic biota and every kind of organisms has a specific salinity range that it can tolerate. Normally TDS ranges from 5 to 1000 mg/l (Brady,

N.C and R.R. Weil, 2004) in the present study the TDS values of water at station 1 were 4.4 and 311 and TDS value at station 2 were 52.6

Electric Conductivity (EC)

Conductivity is affected by the adding up of solids dissolved and it is the excellence of H2O to conduct an electric current and the capability depends on the attendance of ions mobility, their whole concentration relative concentrate ions and quantity of temp (Shinde *et al* 2011). Conductivity is the most important sign of fish enlargement. Conductivity of water depends on temperature and variation of dissolved solids and also depends on ionic concentration, Conductivity of fresh water is mostly ranging in between 50 to 1500 (Boyd, C.E., 1979) In the nearby survey the conductance of H2O at station 1 were 56.2 and 284 and at station 2 were 86.5 and 350 these principles lie in b/w 50 to 1500.

Salinity

Salinity values slightly different throughout year of observation at station 1 minimum value were 0.0 and maximum value 0.3 and at station 2 same values were recorded minimum 0.0 and maximum value 0.31.

Biological Oxygen Demand (BOD)

Biological O2 Demand (BOD) is widely used to point out the organic power of H2O.it indicates the concentration of environment friendly organic matter in H2O. Usually, BOD is measured effluent and contaminated water bodies. (BOD) tests depends on biological activity some of the substances which stops the development of microbes including heavy metals, acidity alkalinity chlorine etc. (BOD) is usually equivalent to the quantity of organic matter available hence determine the strength of the effluent (Marske and Polkowski, 1972) results of (BOD) for station 1 were minimum 5.1 and maximum 12.2 mg/L and BOD for station 2 were 5.2 minimum and maximum 12.5mg/L.

KANCHUGAE (STATION) (1) TABLE 1:

(SEASONAL VARIATION (MEAN + S.D (CV) IN PHYSCIO – CHEMICAL PROPERTIES) OF WATER (2017-2018)

Parameters	Summer (June, July, August)	Winter (Dec, Jan, Feb)	Spring (March, April, May)	Autumn (Sep, Oct, November)
PH	7.266± 0.0471(0.006)	7.266± 0.1247(0.0171)	7.3± 0.2160(0.029)	7.766± 0.1247(0.016)

Temperature	24+ 1.632 (0.0680)	2.33+ 2.494(1.0690)	9.33+ 2.624(0.281)	9.33+ 7.542(0.8081)
DO	5.3+ 0.216025(0.040759)	8+ 0.909212(0.113652)	6.666+ 0.694422(0.104163)	7.8666+ 1.61314(0.205060)
BOD	5.7+ 0.489(0.0859)	11.26+ 0.821(0.0729)	8.966+ 1.3021(0.145)	7.833+ 1.778(0.227)
TDS	201.66+ 60.273451(0.29887)	137.333+ 69.844271(0.508575)	285.33+ 23.0988(0.080954)	40.0666+ 6.458758(0.1612)
conductivity	244+ 34.88(0.1429)	116.4+ 52.55(0.4513)	265.3+ 11.085(0.0417)	138.7+ 100342(0.723)
Salinity	0.133+ 0.047140(0.353553)	0.1333+ 0.04714(0.3535)	0.133+ 0.094281(0.707107)	0.2+ 0.081(0.408248)
Turbidity	54.9+ 15.132(0.275)	16.3+ 3.6887(0.226)	11.43+ 6.982(0.6107)	54.9+ 15.132(0.275)

ZARDALOO (STATION) (2) TABLE 2:

(SEASONAL VARIATION (MEAN + S. D (CV) IN PHYSCIO –CHEMICAL PROPERTIES) OF H2O (2017-2018)

Parameters	Summer (June, July , August)	Winter (Dec , Jan, Feb)	Spring (March , April , May)	Autumn (Sep, Oct, November)

PH	7.633± 0.169(0.0 22)	7.3± 0.141(0.019)	7.3± 0.244(0.033)	7.73± 0.1247(0.016)
Temperature	23.3± 1.6996(0.072)	1.666± 2.054(1.232)	8.66± 3.09(0.356)	9± 7.78(0.865)
DO	4.73± 0.0249(0.0526)	7.73± 0.3858(0.049)	6.366± 0.77(0.121)	6.3± 0.941(0.149)
BOD	5.733± 0.4496(0.0784)	11.366± 0.939(0.0826)	8.633± 1.558(0.1805)	8.1± 1.283(0.158)
TDS	228.6± 33.089(0.144)	140.6± 60.733(0.431)	275.6± 49.35(0.179)	54.7± 1.681(0.030)
Conductivity	266± 62.632(0.2348)	122.9± 26.2(0.213)	245.33± 47.168(0.1922)	173.06± 118.066(0.6822)
Salinity	0.133± 0.0471(0.353)	0.133± 0.0471(0.353)	0.133± 0.094(0.707)	0.2± 0.0816(0.408)
Turbidity	53.6± 17.680(0.329)	15.96± 4.2145(0.2639)	15.2± 9.36(0.6208)	24.36± 2.209(0.0906)

5. CONCLUSION

From the obtained results of the present analysis, it was decided that parameters like electric conductivity, pH, total dissolved solids, salinity were observed to be in safe and limited ranges of both stations station .1 (Kanchoghai) and station .2 (Zardalo) the values are almost closely related and there is no such big difference among the parameters of both water bodies and according to the values recommended by WHO and IS standards. It has been found that both water bodies are non-polluted and its water is safe and it can be used for different

human requirements and can be used for drinking, household activities aquaculture and also best fitted for industrial purposes.

The aquaculture productivity of Zardalo and Kanchoghai water bodies can be improved by maintaining the physico-chemical parameters at more precise level. Before using water, quality assessments tests are recommended before supplying its water for household, drinking, and agriculture requirements, use of insecticides, fertilizers, and other wastes must be checked in the catchment areas of both stations to maintain the recreational and purity of water bodies and to prevent it from pollution.

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