

Limnology of West Flowing Rivers of Karnataka

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Overview

■ 7 Major river systems

Sl.No.	River Systems	Drainage Area	
		1000 sq. km	Percentage
1.	Godawari	4.43	2.33
2.	Krishna	111.74	58.66
3.	Cauvery	34.27	17.99
4.	North Penner	6.94	3.64
5.	South Penner	3.76	1.97
6.	Palar	2.97	1.56
7.	West Flowing Rivers	26.39	13.85
	Total	190.50	100

West flowing Rivers

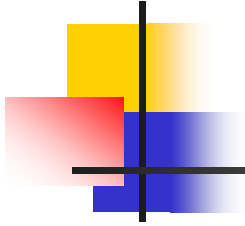
- **Elevation ranging from 400 - 1,600 m above the MSL, close to the Western Ghats ridge.**
 - **Short run varying from 50 km to 300 km**
 - **Very steep in the upper reaches and fairly steep in the middle reaches.**
 - **Rain fed**
-

	Name of the tributary	CA in Sq.kms.	Origin , Altitude & Length	Sub- tributaries
1	Kalinadi	4,188	W Gs, Bidi village, 600 meters, 153 kms.	Pandhari, Tatti-halla and Nagi
2	Gangavalli (Bedthi)	3,574	south Of Dharwad 700 m, 152 kms.	
3	Aghanashini (Tadri)	1,330	Near Sirsi, 500 m 84 km	
4	Sharavathi	3,592	Humacha in Shimoga district, 700 m, 122 km	
5	Chakra Nadi	336	East of Kodachadri in Shimoga dt, 600 m, 52 km	Kollur
6	Varahi (Haladi)	759	Kavaledurga in the Shimoga dt, 600 m, 66 km	
7	Netravathy	3,222	Bellarayana Durga in the D.K., 1,000 m, 103 km	Gundiahole, Kumaradara and Shisiahole.



Independent Catchments

- **Sharavathi and Chakra river**
 - Kollur River,
 - Ghantihole,
 - Venkatapur,
 - Baindurhole,
 - Shankargundi,
 - Kumbarhole and
 - Yedamavinahole



- **Varahi and Netravathi**

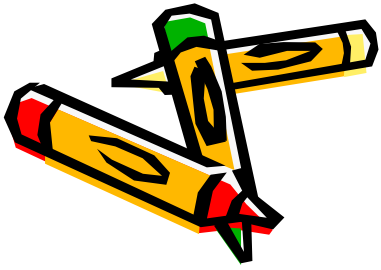
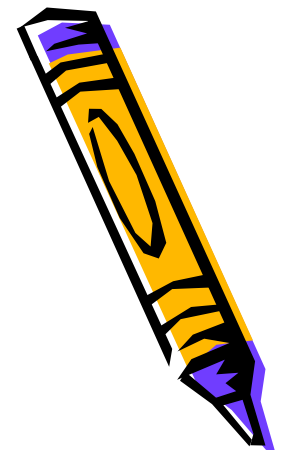
- Swarna,
- Seethanadhi,
- Mulki river,
- Pavanje,
- Nadisalu,
- Gurpur,
- Yennehole and
- Madisalhole

River Basins of Karnataka



- 1. Godhavari Basin
- 2. Krishna Basin
- 3. Cauvery Basin
- 4. North Pennar
- 5. South Pennar
- 6. Palar Basin
- 7. West Flowing

Index:
State Boundry [pink line]
Basin Boundry [green line]
Rivers [yellow line]



WEST FLOWING RIVERS

- Origin-Western Ghats -from 400-1,600 meters above the MSL
- Flow westward and meet Arabian sea
- Very steep in upper reaches
- Run varies from 50 kms to 300 kms

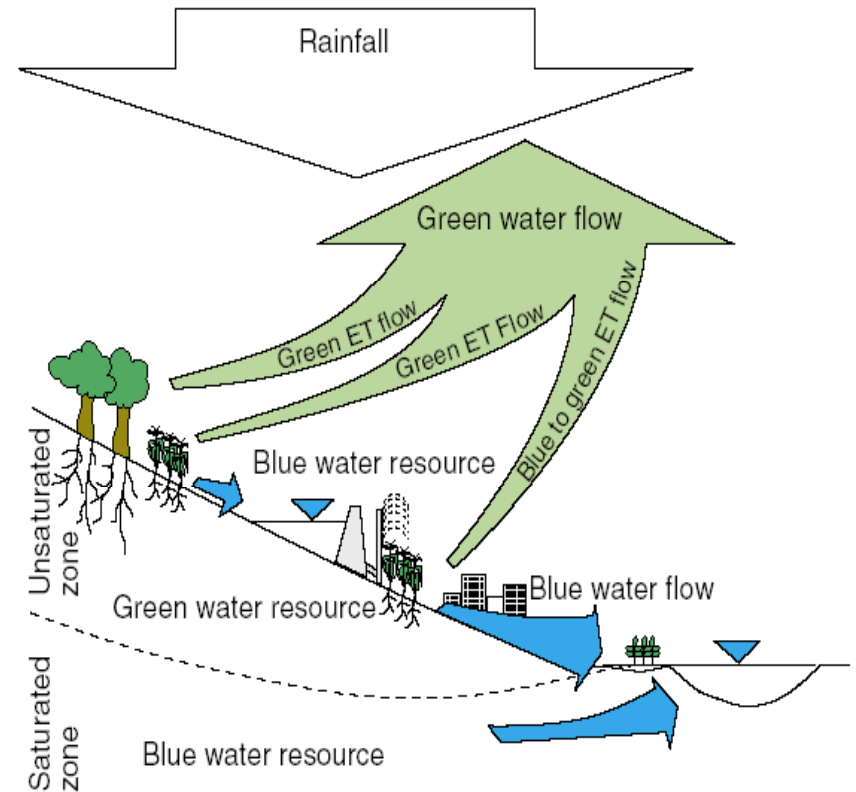


Independent catchments in the West Flowing River system

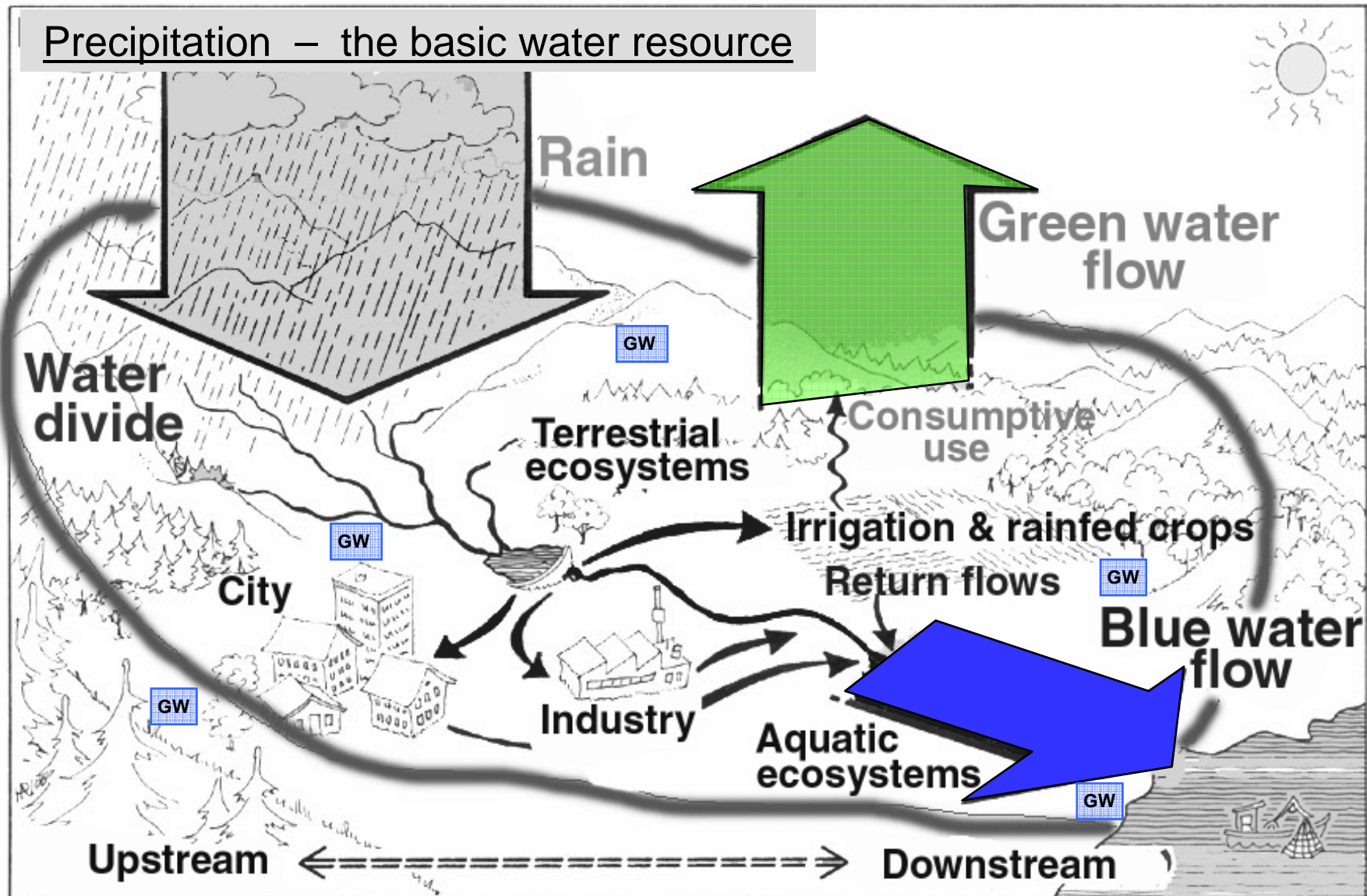
- **Independent catchment-Sharavathi- Chakra**
(Kollur River, Ghantihole, Venkatapur, Baidurhole, Shankargundi, Kumbarhole and Yedamavinahole)
 - **Independent catchment-Varahi-Netravathi**
(Swarna, Seethanadhi, Mulki river, Pavanje, Nadisalu, Gurpur, Yennehole and Madisalhole)
 - **Independent catchment-Netravathy-Chandragiri (Payaswani)**
-

“Blue water” and “Green water”

- Conversion of lotic to lentic system and lentic to lotic
- Blue to green
- Human use pattern
- Limnological role



Blue & Green Water - perspective



Adapted from: GWP (M. Falkenmark), 2003, Water Management and Ecosystems: Living with Change

Food and water scarcity

- Current scenario.
- Food security.
- Water security
- Relationships

Habitat Biota and compatibility

- Endemic species, habitat diversity
- Water quality and resident biota
- Geological, chemical and biological cycle and its impact on limnological status.
- Ecosystem service

Significance of catchment area Water holding capacity

- Role on limnology of the water body.
- Influence of land drainage , LBA and its influence
- Anthropogenic influence, interventions
- Recharge sources,

Importance of lentic system in ecological integrity and Ecosystem services

- Small water bodies and their role
- Artificial reservoirs and multiple uses.
- Community use

Recharge sources

- Rain, Spring, Underground sources etc.
- River water quality

Anthropogenic interventions and activities along Catchment area

- River water quality and quantity
- Minimum flow to retain ecological integrity.

Netravathi River-Focus of attention

- Water transfer proposals.

Kali River-Economy and Ecology

- The importance of Kali river.
- 7 Dams and 6 reservoirs. Balancing type.
- Multipurpose use
- Uncertainties of recharge.
- Need to enhance precipitation.
- Methods and lessons other areas.

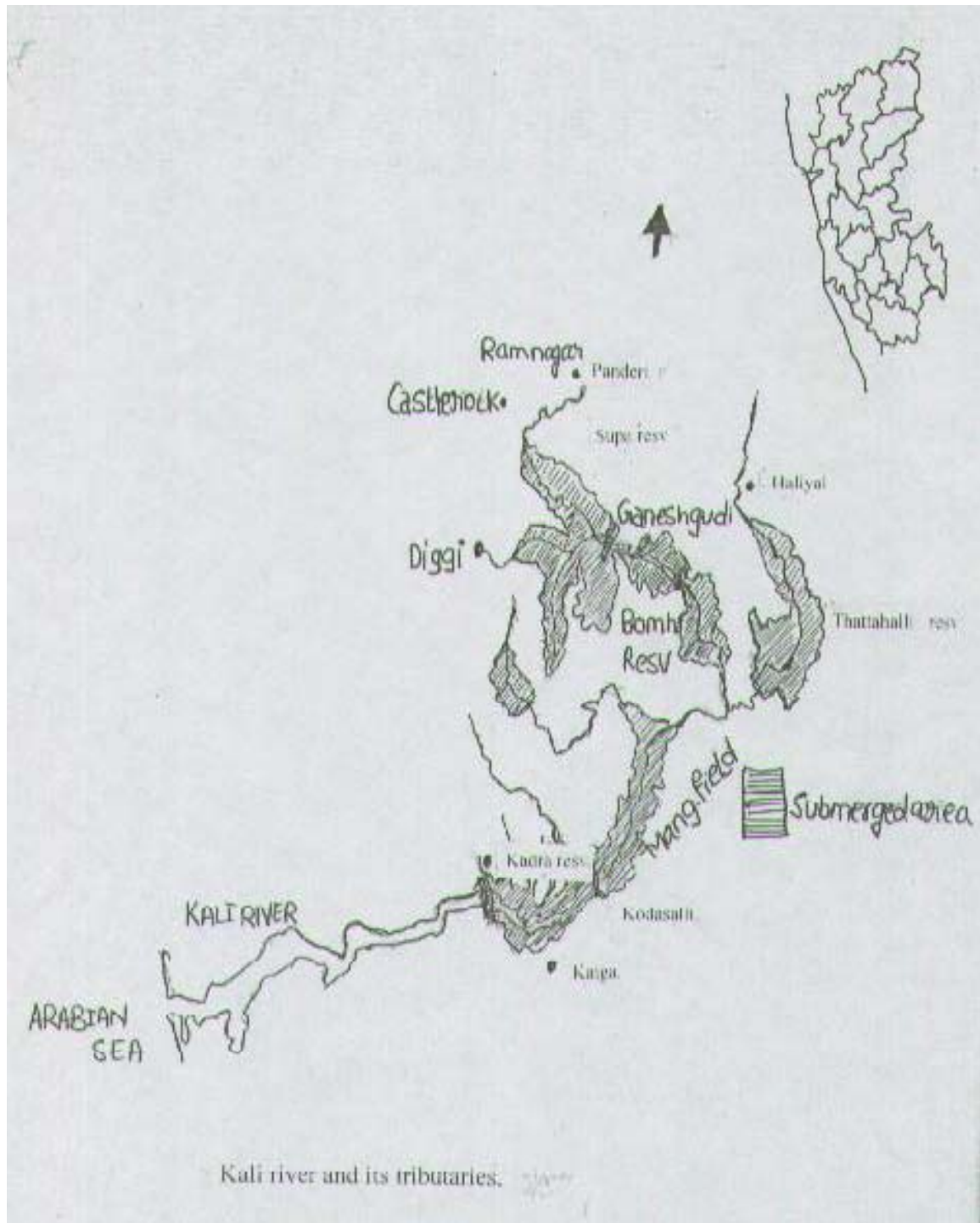




Fig.18,19 Islands near intake

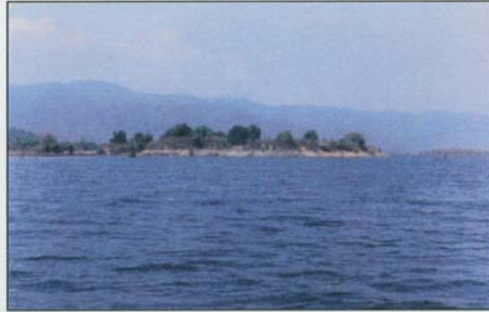


Fig.14 Quarry at Dasanahalli



Fig.15 View of the Reservoir at Dasanahalli



Fig.20,21 Islands near Deokar



Fig.16 Mardinala River

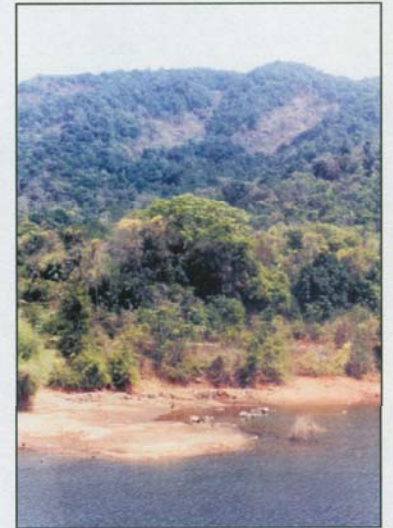


Fig.17 Mardinala Catchment

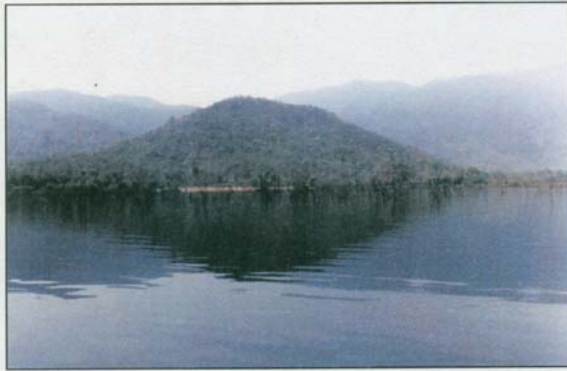


Fig. 10. Catchment area Road Side View.

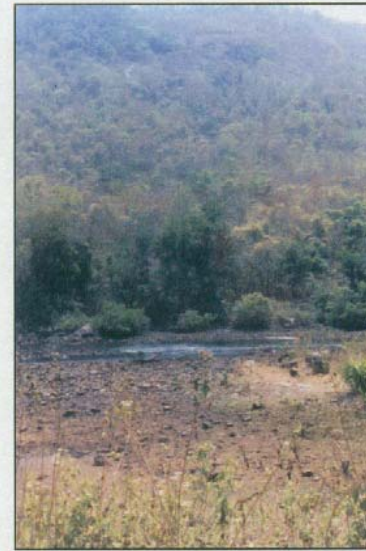


Fig. 6. Kodasalli (Dam site)

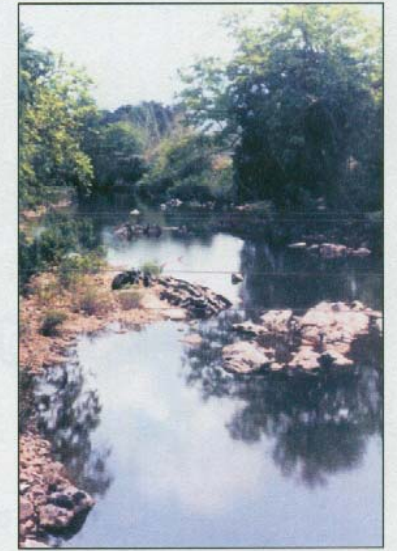


Fig. 7. Vaki River

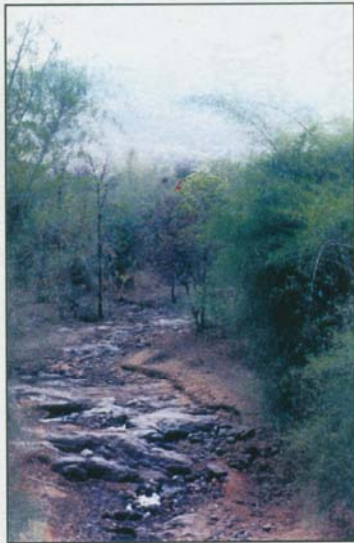


Fig. 12. Balmane River (Road)



Fig. 11. Balmane (Dam Site)



Fig. 8. Deokar

Fig. 13. Balmane Field



Fig. 9. Deokar catchment area



Fig. 3 Submerged tree in the Kadra Reservoir
(Water levels can be seen by the marking on the tree.)

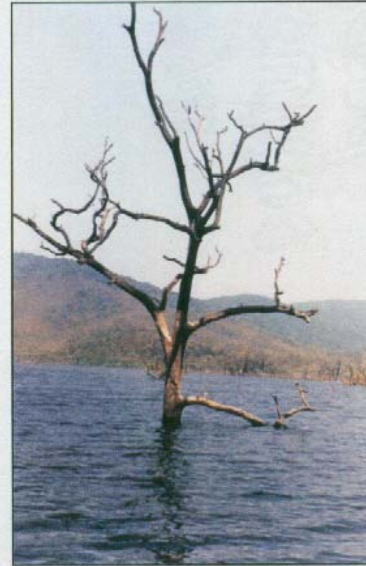
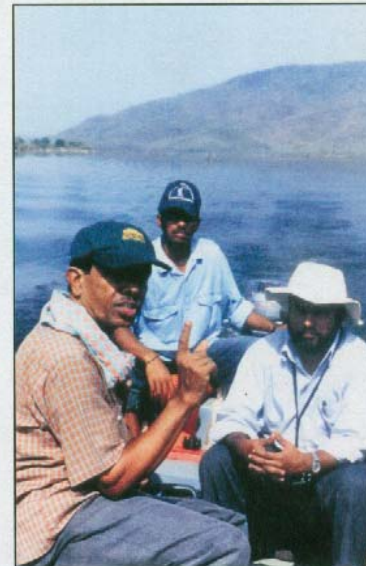


Fig. 4 Interaction with the local people (Balemane)

Fig. 5 Cruise in the Kadra reservoir



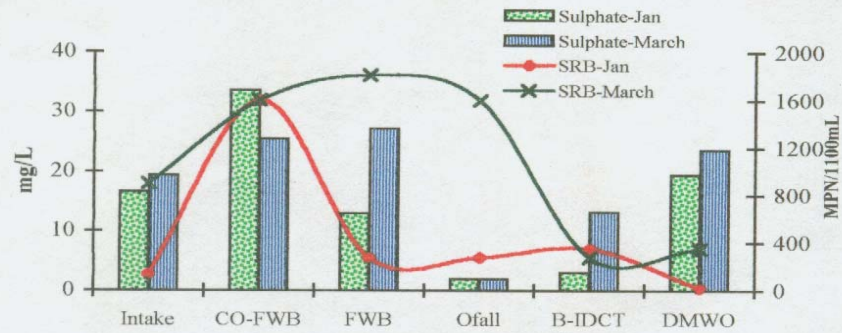


Figure 39 Sulphate Reducers and Sulphate content from study locations

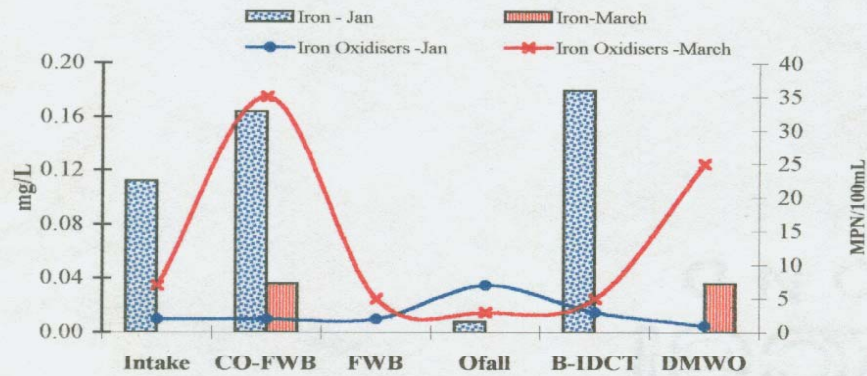


Figure 40. Iron oxidisers and Iron content from the study locations

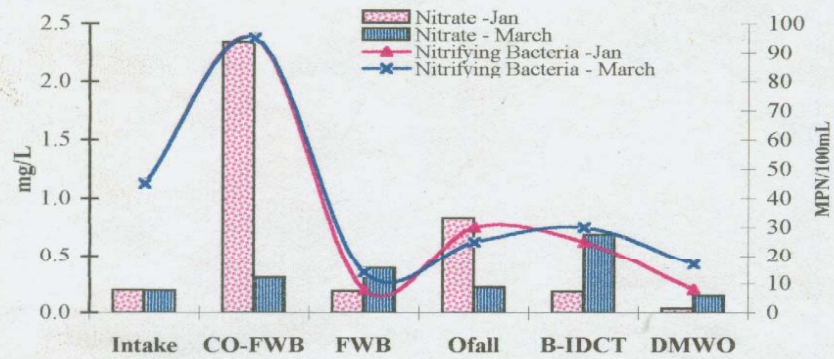
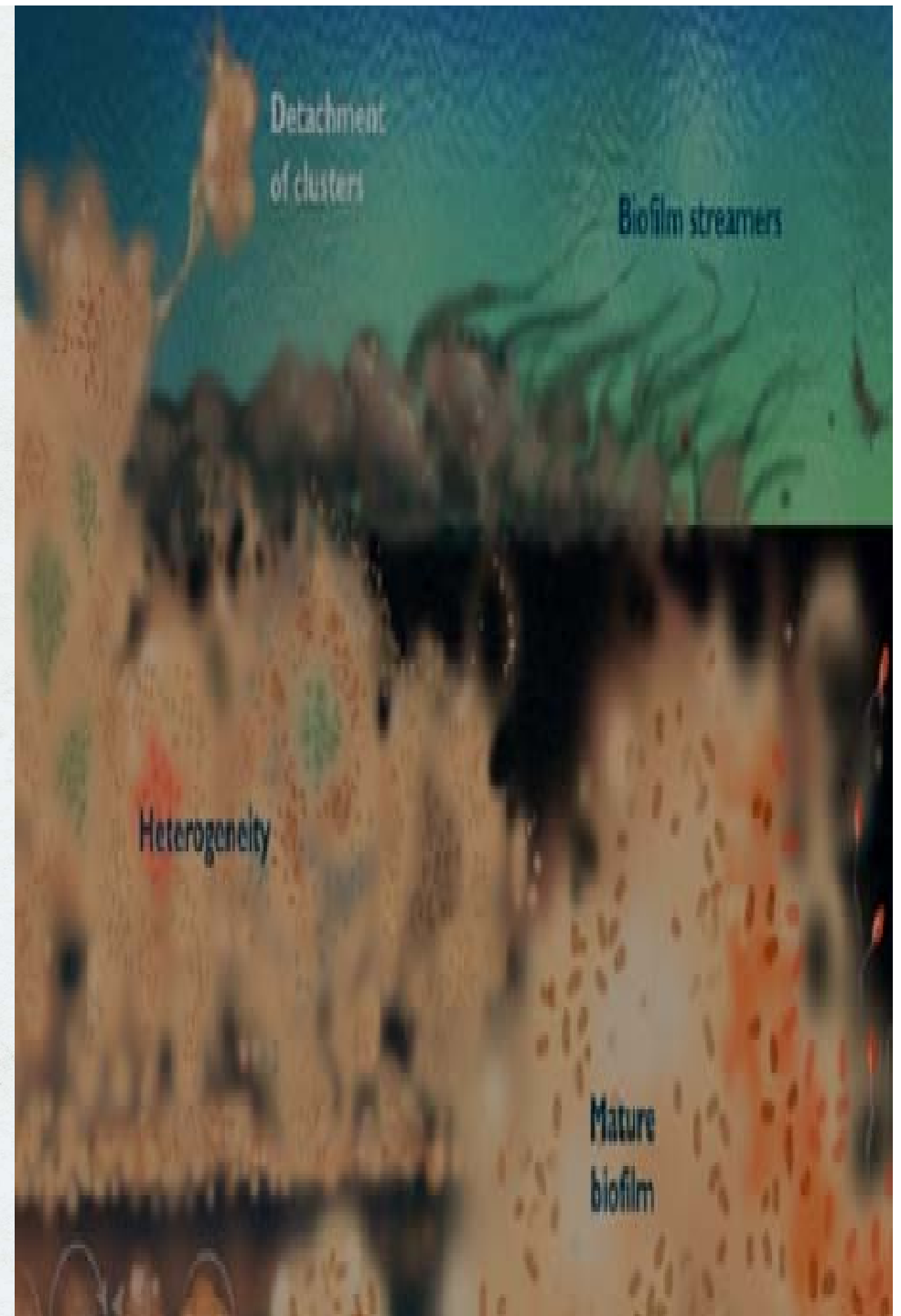
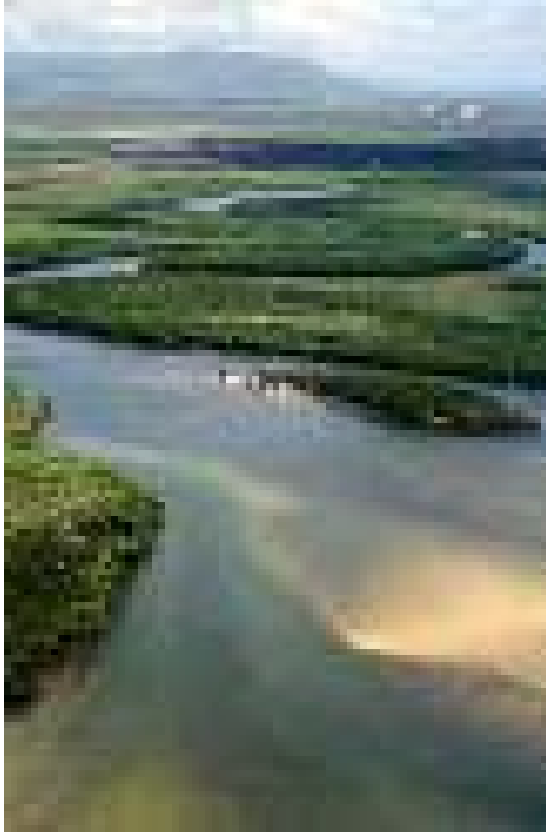


Figure 41. Nitrifying bacteria and nitrate content from the study locations



Restoration ecology

- Lessons from others.
- Which way to Go



Thank You