

()
(ENSO)

()

//

)

() () ()
()

ENSO

(:

(.

·

·

()

()

()

()

ENSO

:

()

ENSO

() % % % ()



(warm)

() ENSO (cold)

Niño 3.4

ENSO

○ /	○ /	○ /	○ /	○ /
○ /	○ /	○ /	○ /	○ /
/	/	/	/	() (km ²) (m ³ /s)

(base) (cold) (warm)
Q_{w33} (percentic)

Q_{b67}

Q_{wp}/Q_{cp} Q_{cp}/Q_{bp} Q_{wp}/Q_{bp}

Q_{w50}/Q_{b50}

)

(

) Q_{w33}/Q_{b33}

(

()

Q_{cp} Q_{wp}

Q_{w33}/Q_{c33}

Q_{bp}

ENSO

ENSO

p,b,c,w

()	()

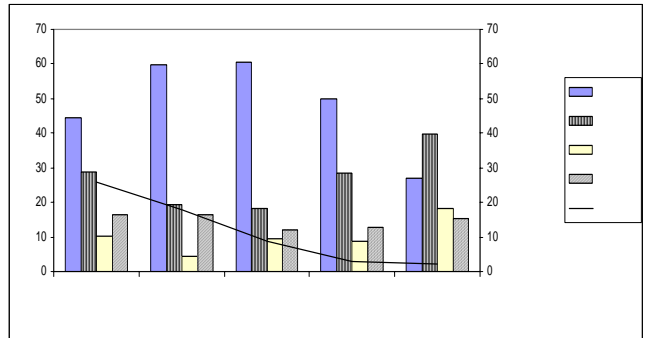
Archive of SID

Q_{w50}/Q_{b50}

()

ENSO
()

Archive of SID



ENSO

ENSO

Q_{w50}/Q_{b50}

ENSO

()

) Q_{c50}/Q_{b50}

(

ENSO

ENSO

ENSO

ENSO

Q_{c50}/Q_{b50}

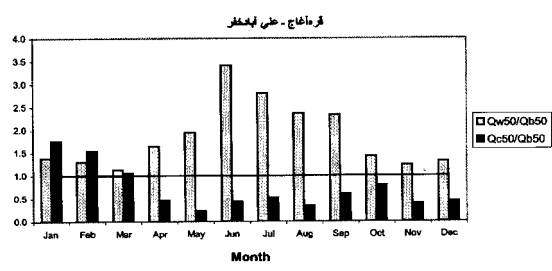
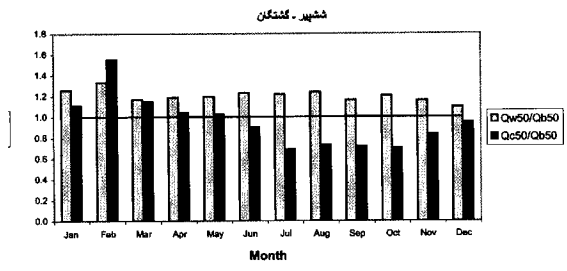
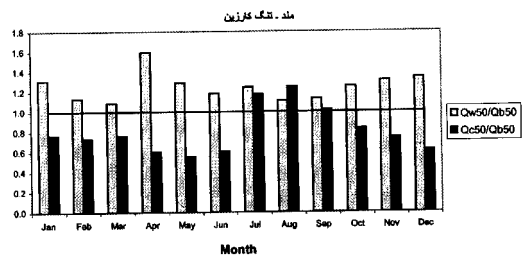
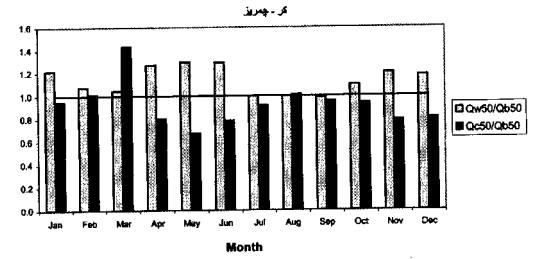
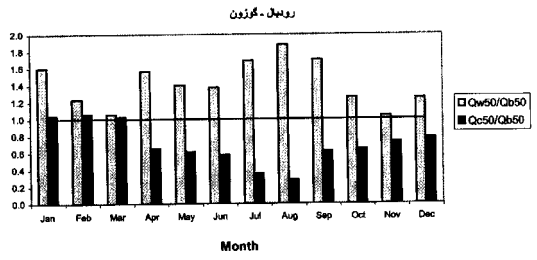
Q_{c50}/Q_{b50}

Q_{w50}/Q_{b50}

Q_{wa}/Q_{ba}

a

Q_{ca}/Q_{ba}



$Q_{c50}/Q_{b50}, Q_{w50}/Q_{b50}$

()

ENSO

()

Qw33/
Qb33

Qc67/
Qb67

()

)

(

Archive of SID

%

Qc33/
Qb33

)

()

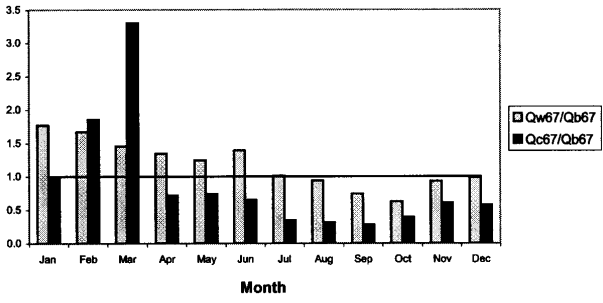
(

/

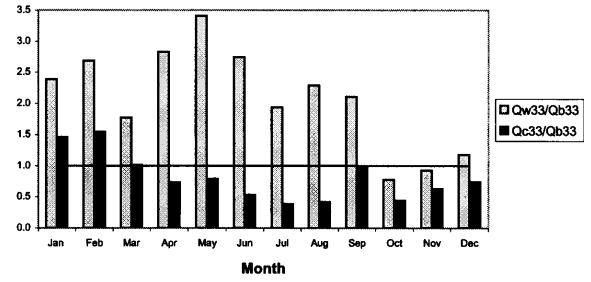
ENSO

Qw67/
Qb67

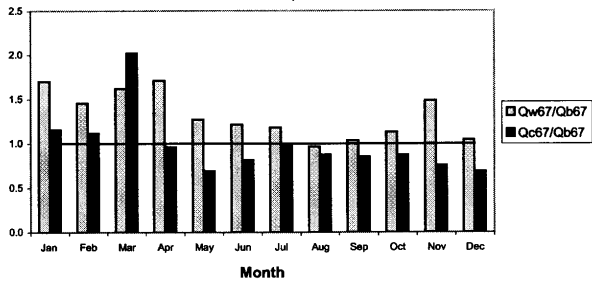
رویدال - گوزون



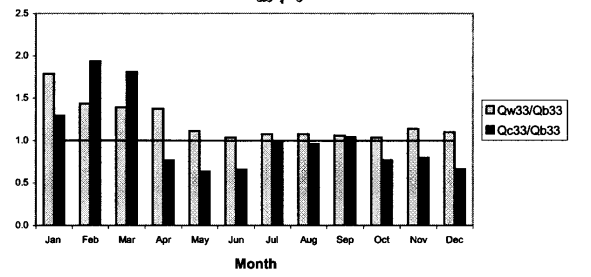
رویدال - گوزون



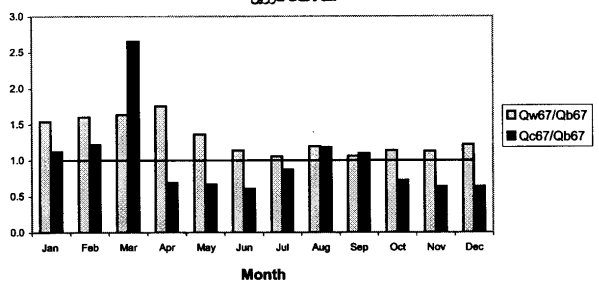
کر - چمریز



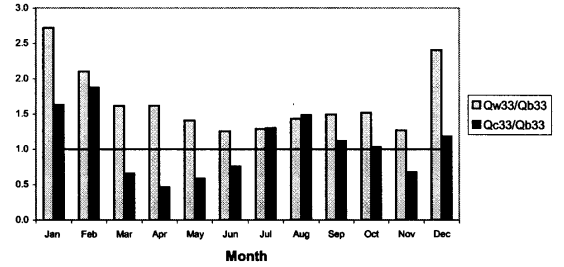
کر - چمریز



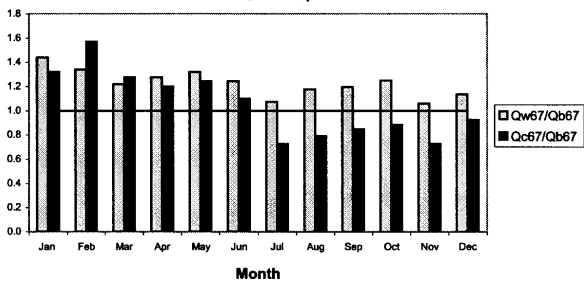
مند - تنگ کازین



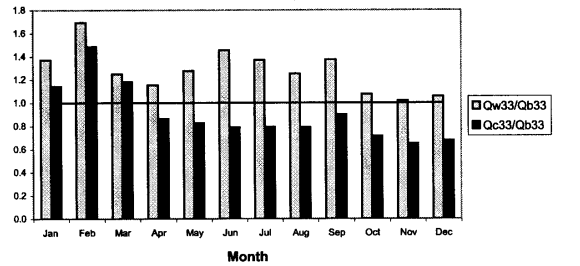
مند - تنگ کازین



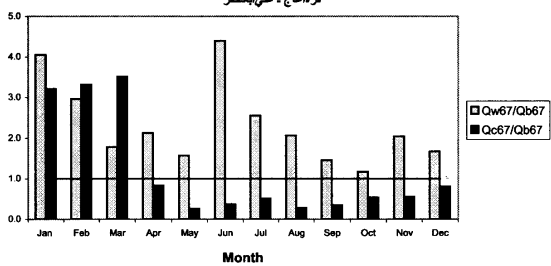
شهر - گشتگان



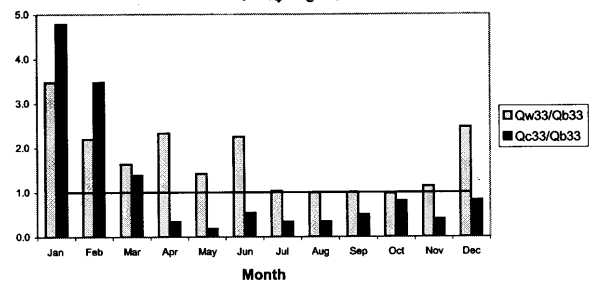
شهر - گشتگان



قراغاج - طری ایختر



قراغاج - طری ایختر



Qc67/Qb67 Qw67/Qb67

Qw33/Qb33 Qc33/Qb33

ENSO

REFERENCES

- Dracup, J. A. , & E. Kahya. 1994. The relationships between U. S. streamflow and La Nina events. *Water Resour. Res.*, 30(7) : 2133-2141.
- Eltahir, E. A. B. 1996. El Niño and the natural variability in the flow of the Nile River. *Water Resour. Res.*, 32(1):131-136.
- Kahya, E. , & J. A. Dracup. 1993. U. S. streamflow pattern in relation to the El Niño-Southern Oscillation. *Water Resour. Res.*, 29(8):2491-2503.
- Kahya, E. , & M. C. Karabork. 2001. The analysis of the El Niño , La Niño signals in streamflows of Turkey. *Inter. J. Climatol.*, 21:1231-1250.
- Nazemosadat , M.J. & I. Cordery. 2000a. On the relationships between ENSO and autumnal rainfall in Iran. *Inter. J. Climatol.*, 1: 47-62.
- Nazemosadat, M. J., Ghasemi, A. R. 2004. Quantifying the ENSO Related Shifts in the Intensity and Probability of Drought and Wet periods in Iran. Accepted in *Journal Of Climate*, in press.
- Piechota , T. C. , F. H. S. Chiew , & J. A. Dracup. 1998. Seasonal streamflow forecasting in eastern Australia and the El Niño-Southern Oscillation . *Water Resour. Res.*, 34(11) : 3035 – 3044.
- Reynolds, R., M. Detinger, D. Eagan, D. Stephens, L. Highland, & R. Wilson. 1998. Effects of El Niño on streamflow, Lake level, and landside potential. On line in: <http://Geochange.er.usgs.gov/sw/changes/elNiño/>.
- Sun, H. , & D.J. Fubrish. 1997. Annual precipitation and river discharges in Florida in response to El Niño and La Nina-sea surface temperature anomalies. *J. Hydrol. ,* 199:74-87.
- Trenberth , K. E. 1997. The definition of El Niño. *Bulletin of Am. Meteorol. Soc.*78(12): 2771-2777.
- Zubair, L. 2002. El Niño-Southern Oscillation influences on rice production in Sri Lanka. *Int. J. Climatol.* Vol. 22(2): 249-260.