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(USGS)

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Monitoring Changes in Land Use and Its Relation With Geomorphological Features of Dohuk City and Its Vicinity Using Remote Sensing Data

Hekmat S. AL-Daghastani
Remote Sensing Center
Mosul University

Farouk S. AL-Omari
College of Science
Mosul University

Allaa N. Hamdoon
Remote Sensing Center
Mosul University

ABSTRACT

Time sequential remote sensing data were used to detect the changes in land use and its relation with geomorphological features in Dohuk City and its vicinity. Thematic maps were prepared which enabled the comparison of different land use, in addition to

the role of land form nature to the future of urban planning of Dohuk City which is located between Bekhair Mountain in the north and Dohuk Mountain in the south.

Time sequential aerial photographs and Spot imagery revealed documental information about the nature of land use in Dohuk City during 1956 till 1998. The compiled multidate land use maps using U.S.Geological Survey (USGS) System show the whole of apparent activities concerning the existing land use pattern and its spatial distribution for the last (42) years . Such information is a prerequisite for any future urban development program of Dohuk City .

.(Mahavir and Galema, 1991) ..

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(1:50,000 ,1:38,000)

(1:20,000)

(1985/7/1,1956/8/15)

(/4/12)

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(Spot)

(:34,000)

(Unstable Shelf)

(Buday and Jassim, 1987)

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(High Folded Zone)

(Dohuk

(Bekhair Anticline)

Anticline)

(Lineaments)

(Fault)

(Vergence)

(Numan and Al-Azzawi, 1993)

Tawfiq and)

.(Domas, 1977

(Gercus Fm.)

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(Avanah Fm.)

(1)

(E)

(Al-Omari and Sadek, 1975) (*Alveolina*)

(Pila Spi Fm.)

. (C)

(Al-Fat'ha Fm.)

.(Bellen et al., 1959) (D)

(B)

(Quaternary Deposits)

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(A)

.(Tawfiq and Domas, 1977)

.(Levandowski et al., 1978)

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(Verstappen and Zuidam, 1975)

(ITC)

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:Erosional Core of Dohuk Anticline Unit

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(Cliffs)

.(Buday, 1980)

: Back Slope Unit

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(Escarpment)

:Middle Homoclinal Structural Ridges Unit

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:Outer Homoclinal Structural Ridges Unit

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(Dyke-like

(Hogback ridges)

ridges)

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: Erosional Glacis Unit

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:Accumulative Glacis Unit

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:Alluvial Fans

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(Al-Daghastani, 1987)

:Alluvial River Terraces Unit

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(T3, T2, T1)

(Tawfiq and Domas,

1977)

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(Land use)

(Land cover)

(.....)

(...)

.(Lillesand and Kiefer, 1987)

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(USGS)

(Anderson et al., 1976)

(1989)

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(1:20,000)

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:Urban and Built-up Land

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:Agricultural Land

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:Range Land -

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:Forests (plantations) () -

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:Waters -

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:Barren Lands -

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. (Syam et al.,1997)

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(Zdruli et al., 1997)

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. (Spot)

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(Clay Minerals)

(Montmorillonite and Palygorskite)

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. () (Sarmiento, 2000)

(Zdruli et al., 1997)

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(Unstable slopes)

(Marker and McCall, 1990)

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.(Buday and Jassim, 1987)

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.(Verheye et al. , 1997)

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