

GEOGRAPHY AND CULTURAL LANDSCAPES OF KAZAKHSTAN

Renato Sala, JeanMarc Deom

Laboratory of Geoarchaeology, KazNU, Ministry of Education and Sciences, Kazakhstan; ispkz@yahoo.com www.lgakz.org

SUMMARY : The article provides a description of the physical features of the territory of Kazakhstan (relief, climate, vegetation belts, paleogeography) (par 1) and of the historical phases of its colonization (Paleolithic, Neolithic, Bronze, Early Iron, Early Medieval, Late Medieval periods) (par 2). Then (par 3) for each period are sorted out a set of locational factors, the most typical material monuments, and the cultural regions concerned; and, for each region, the corresponding natural landscapes. On this basis is tentatively elaborated a general map of the cultural landscapes of Kazakhstan from the Paleolithic to the Ethnographic period.

KEYWORDS : Kazakhstan, Geography, Natural landscapes, Paleogeography, Historical periods, Locational factors, Cultural regions, Cultural landscapes.

CONTENTS

1 - Geography of Central Asia and Kazakhstan

- 1.1 - Central Asia: aridity and fourfold partition
- 1.2 - Kazakhstan: relief, precipitation and vegetation belts
- 1.3 - Landscape paleo-changes: aridization process and switches between glacial and interglacial stages
- 1.4 - Typical natural landscapes of Kazakhstan

2 - Human cultures of Kazakhstan

- 2.1 - Paleolithic cultures (2 Ma - 10 ka BP)
- 2.2 - The Neolithic (5000-2000 BC)
- 2.3 - The Bronze age (2000-800 BC)
- 2.4 - The formation of the nomadic pastoralist confederations (800 BC - 1800 AD)
- 2.5 - The Medieval urbanization of the Syrdarya and of the Tianshan piedmonts

3 - Cultural regions and cultural landscapes of Kazakhstan

- 3.1 - Cultural partition of the territory of Kazakhstan
- 3.2 - Mapping the cultural regions and cultural landscapes of Kazakhstan

References

Acronyms

1 - GEOGRAPHY OF CENTRAL ASIA AND KAZAKHSTAN¹

1.1 - Central Asia: aridity and fourfold partition

Central Asia is a *temperate continental arid region*, with hot summers, cold winters, and wet springs. So, the main character of the landscape and the cultural history of Central Asia (CA) and Kazakhstan (KZ) is by far the way the scanty atmospheric waters are caught and distributed. This is conditioning the possibility of life and the localization and migratory routes of human cultures.

Central Asia has a *relief* made of mountain ranges surrounded by flat plains hosting landlocked water basins. All together the relief forms, the latitudinal gradients and the exposition to the Atlantic or the Pacific atmospheric circulation suggest a *fourfold partition* of the Central Asia territory along a W-E axis (Syrdarya, Tianshan, SE-Altai) and a S-N axis (HinduKush, Pamirs, Tianshan, Tarbagatai, Altai). Such partition is relevant from both the geographical and the cultural point of view.

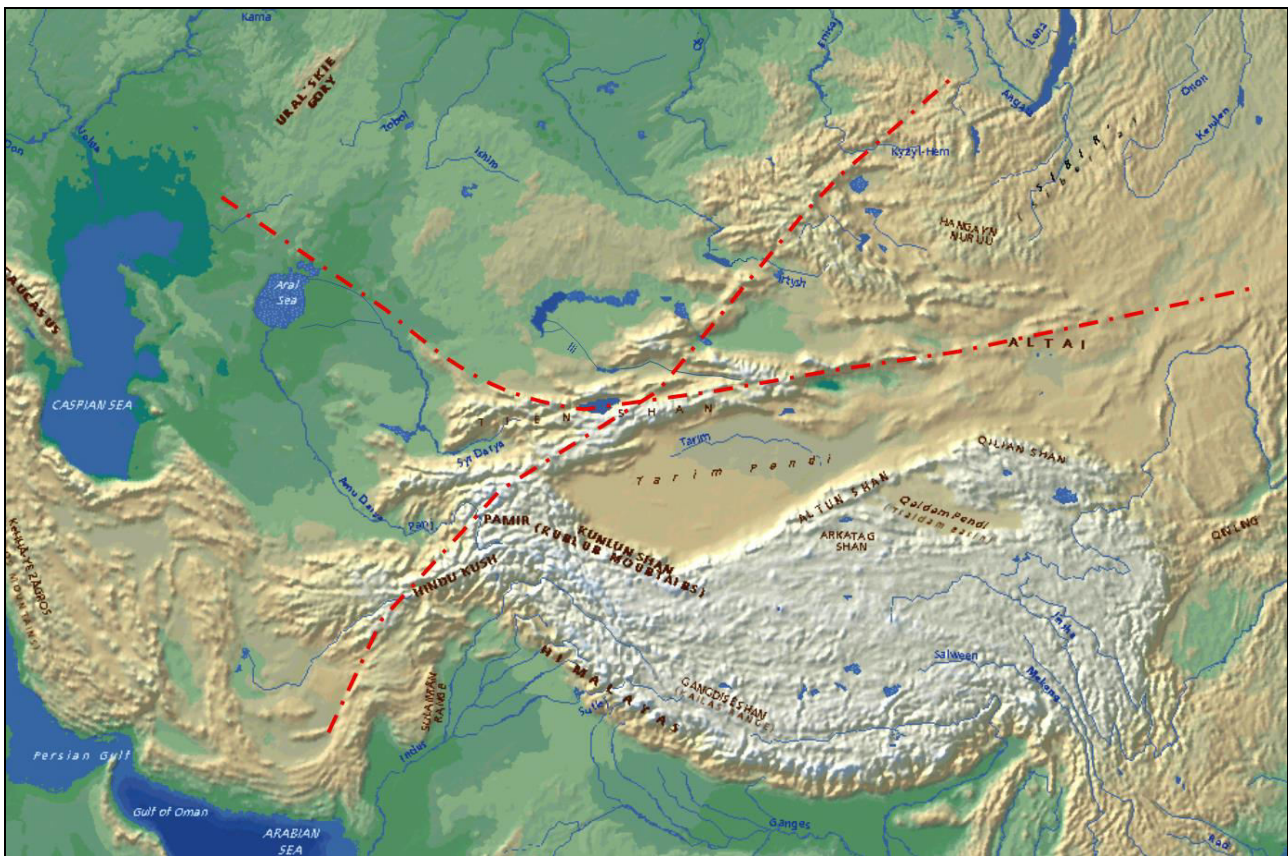


Fig 01 - Satellite image of Central Asia with fourfold partition.

1.2 - Kazakhstan: relief, precipitation and vegetation belts

The Kazakhstan tectonic platform (Kazakhstania), 500 millions ago, was an island of the same size of Madagascar, located on the southern tropics and driving north. By 250 million years ago (Ma) it reached the 30° latitude north and here joined the Siberian and Chinese plates in the formation of the Eurasian proto-continent. At the time it was still facing a southern ocean (Paleo-Tethys sea). Then Arabia and India collided with Eurasia and, around 12 Ma, Kazakhstania became a landlocked country. The present Caspian lake, like the Mediterranean and the Black sea, are relict basins of the ancient Tethys sea.

¹ This presentation is based on documents, maps and aerial-photos produced in the context of the multidisciplinary work of the Laboratory of Geoarchaeology of Almaty, KazNU University, Ministry of Education and Sciences, Kazakhstan.

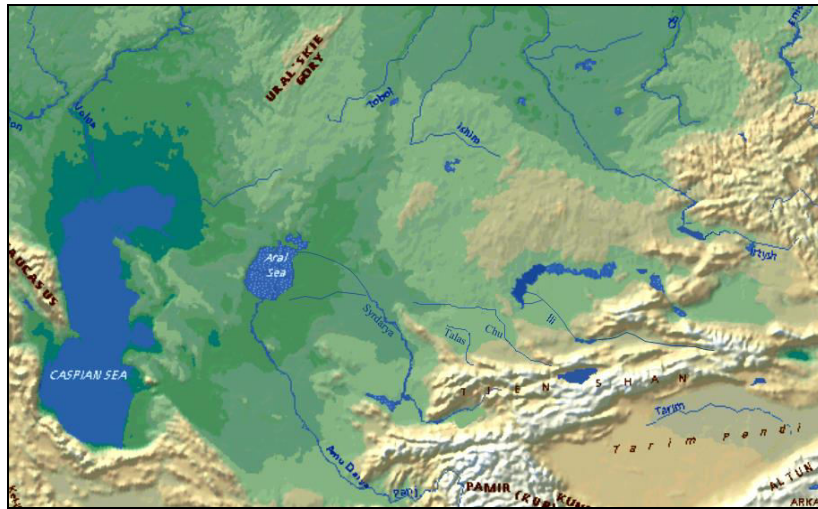


Fig 02 - Physical map of West Central Asia

Modern Kazakhstan constitutes the NW section of Central Asia. It is a continental region of which the **water resources** mainly consist of precipitation from N-Atlantic air masses: during spring in the south and during summer in the north. Meteoric water is caught proportionally to altitude, mainly by mountain ranges, and carried down by few rivers into landlocked evaporation basins. The sediments of the Aral and Balkhash lakes are recording post-glacial climatic fluctuations.

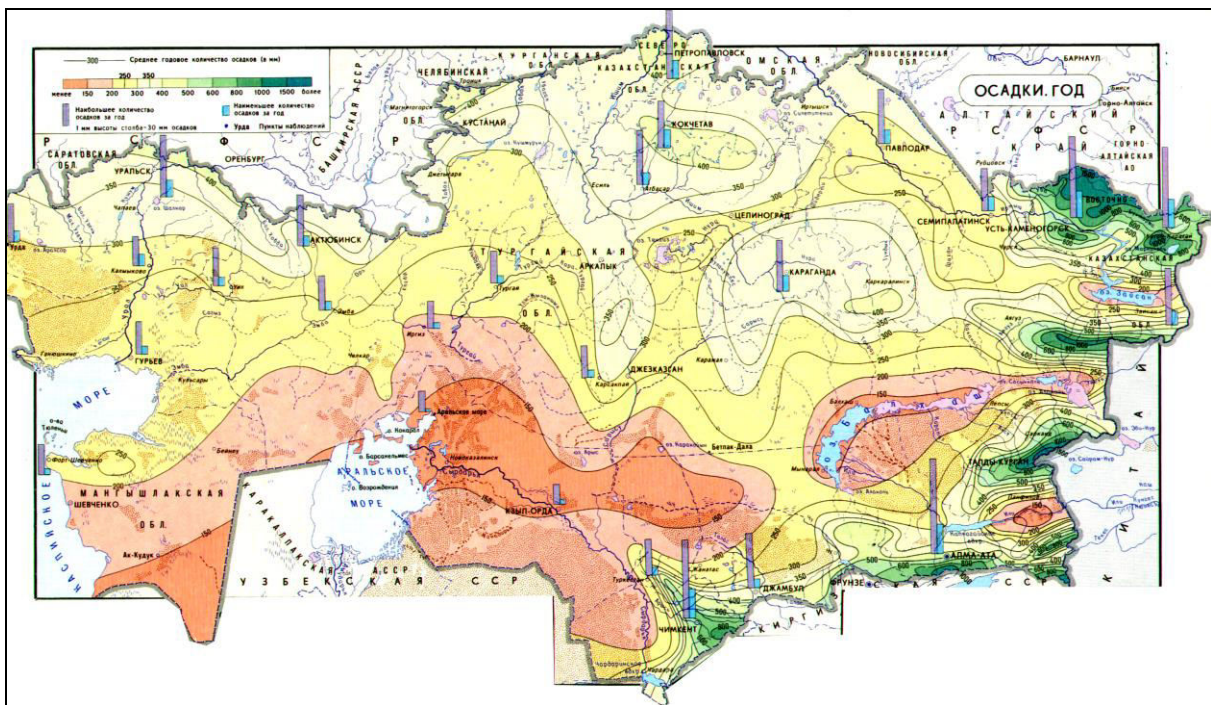


Fig 03 - Precipitation map of Kazakhstan (Atlas Kazakhskoi SSR)

Altitudinal gradients decrease quite regularly from the mountainous E-SE to the flat west. Together with relief, are decreasing precipitation values, so that, under a certain altitudinal level, the desert develops and widens in the same east-to-west direction, from the Balkhash to the Aral and Caspian seas.

Latitudinal gradients are responsible for lesser evaporation and better catchment of Atlantic air masses, and so for the northward succession of parallel **vegetation belt-zones** (BZ): southern, middle and northern (semi-) deserts, followed by desert, dry, arid and forest steppes. This system of desert and steppe belts is bordered in the east and south-east by a relatively narrow SW-NE band of piedmont plain and mountain vegetation.

Altogether the Kazakh territory can be subdivided into 18 belt-zones. They are individuated taking in consideration relief and vegetation characters, so that in this paper we can refer to them as natural landscapes.

NEW ZONING (BELT-ZONES) OF THE TERRITORY OF KAZAKHSTAN

(according to Rachkovsky et alia, 2004)

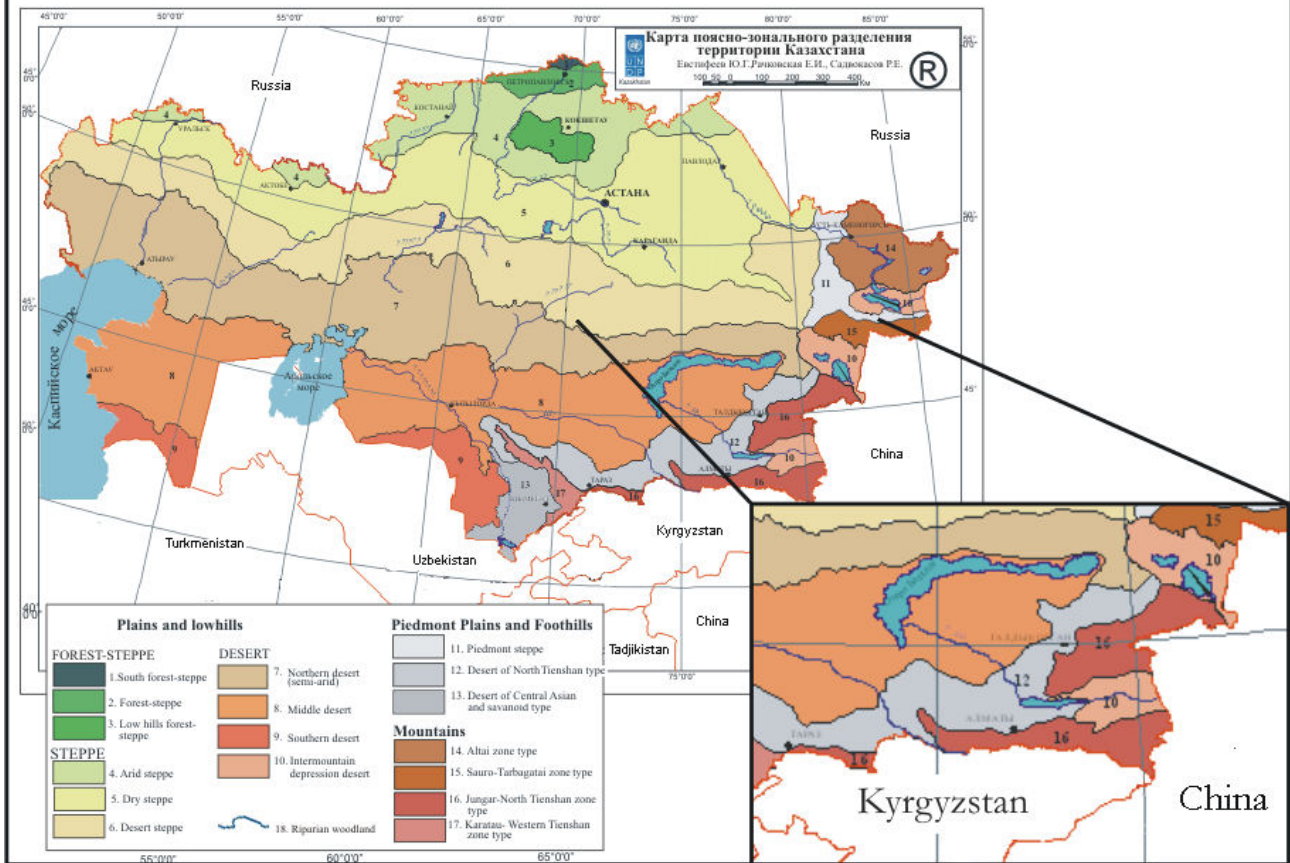


Fig 04 - Belt Zones of Kazakhstan (Rachkovsky et alia 2003)

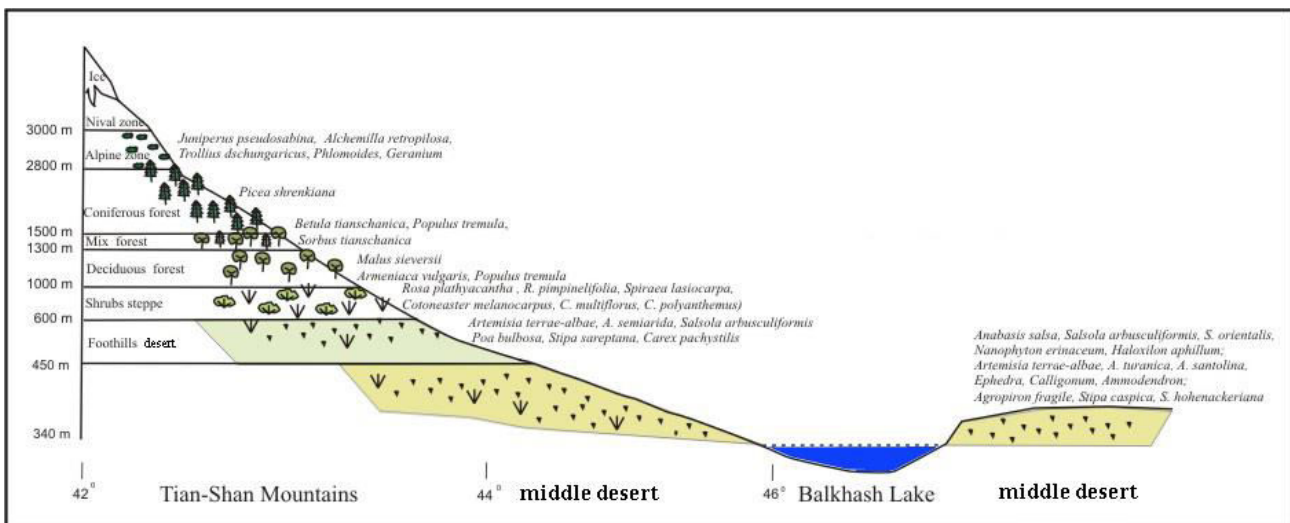


Fig 05 - Belt zones of Semirechie (Nigmatova 2009)

1.3 - Landscape paleo-changes: aridization process and switches between glacial and interglacial stages

Climatic-environmental conditions and landscapes are quite changeable in time. The genus Homo (habilis, erectus, Neanderthal, sapiens-sapiens) during his long history witnessed everywhere on the planet very extreme climatic changes. In Kazakhstan, during the last 2 million years, these changes have been very relevant: a progressive process of aridization has been provoked by the Quaternary rise of the Tianshan mountains and the switch from the monsoonal to the Atlantic atmospheric circulation;

and several fluctuations happened between *glacial-interglacial stages* together with deep changes of floral and faunal complexes and landscape zones.

The Early Holocene (11-7 ka) sees the establishment in south Kazakhstan of the modern desert and semi-desert zones (the last one expanded to the NE when compared to the modern one), followed on the north by open woodland; the Late Holocene sees the contraction of the semidesert and the substitution of the open woodland by the modern dry steppe and forest steppe zone.

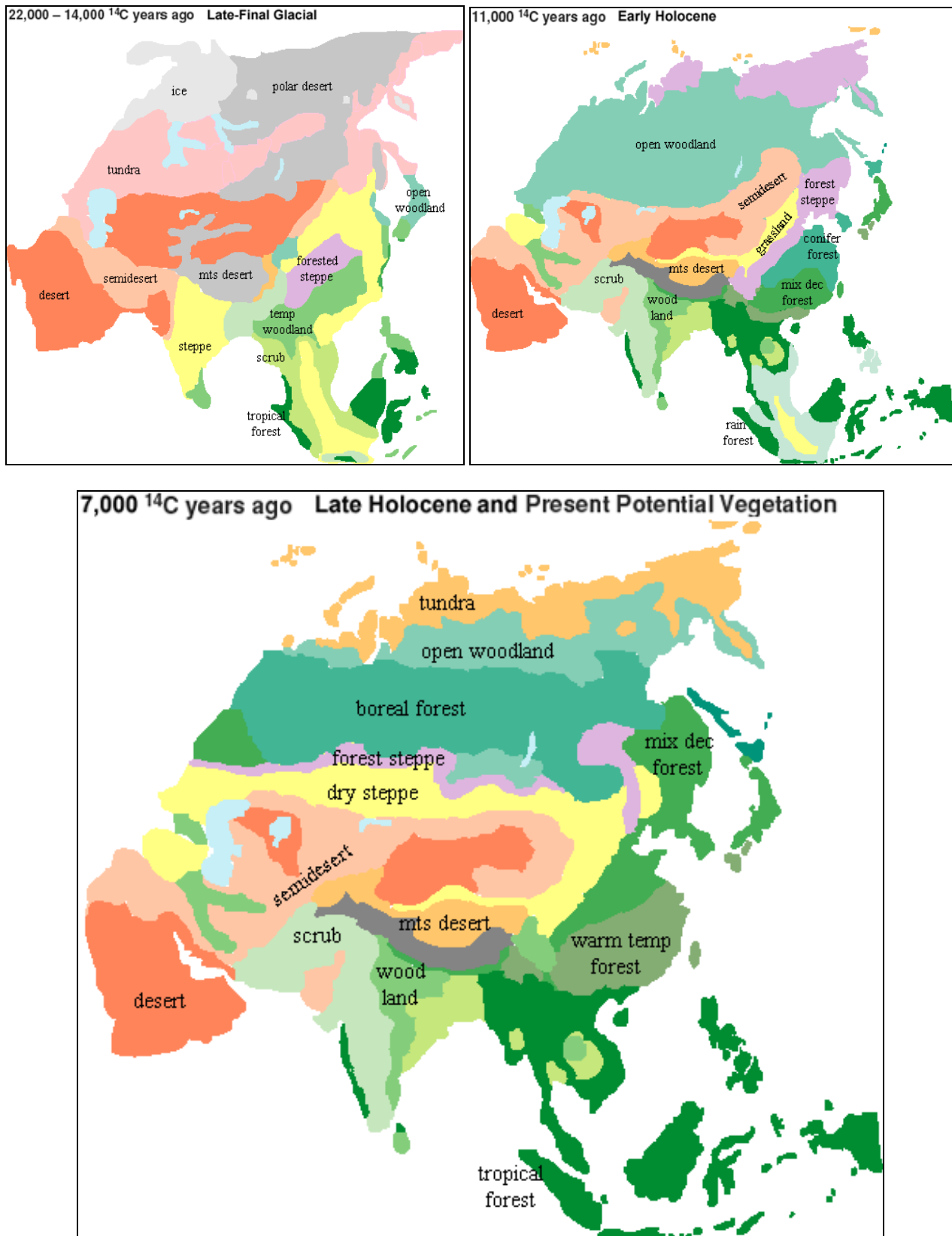


Fig 06 - Landscape zones during the last Glacial maximum, the Early Holocene and the Late Holocene periods (Q.E.N., *The Global Atlas of paleo-vegetation*)

1.4 - Typical natural landscapes of Kazakhstan

Here below are provided some views of typical modern landscapes (belt-zones, BZ) of Kazakhstan. They are ordered from SE to SW (from the Tianshan mountains to the Caspian, by decreasing altitude and increasing aridity) and from S to N (from Central to North and Northeast Kazakhstan, increasingly cooler and moister) (*photos R. Sala*)



Fig 07 - Glacial zone of the Tianshan mountains, 3800 m asl (belt zone 16). View to NE.



Fig 08 - Shrub-steppe piedmonts of the Jungarian mountains, 2000 m asl (BZ 12). View to N.



Fig 09 - Riparian woodland (tugai) of Middle-Syrdarya, 200 m asl, between southern and middle desert (BZ 18). View to W.



Fig 10 - Ustyurt plateau, 150 m asl, middle desert (BZ 8). View to NW.



Fig 11 - Caspian western shore (Mangyslak peninsula), -26 m asl, middle desert of the (BZ 8). View to NE.



Fig 12 - Uhtau mountains (Central KZ), 500 m asl, northern desert (semidesert) (BZ 7) and desert steppe (BZ 6) . View to N.



Fig 13 - Dry steppe and low-hills of the Kalbinsky range, 700 m asl (East Kazakhstan) (BZ 5). View to N.



Fig 14 - Low-hill forest steppe of Borovoe, 300 m asl (N-Kazakhstan) (BZ 3)

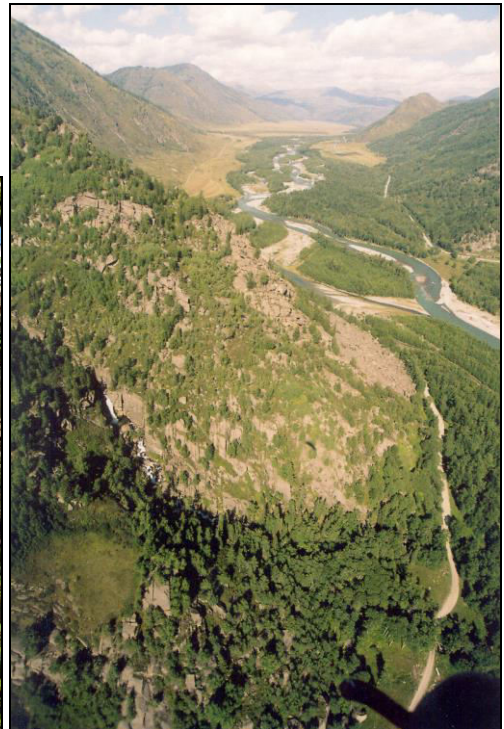


Fig 15 - Altai mountains, 1100 m asl (Berel) (BZ 14)

2 - HUMAN CULTURES OF KAZAKHSTAN

2.1 - Paleolithic cultures (2 Ma - 10 ka BP)

The first **Paleolithic cultures** in Kazakhstan appeared 2 millions years ago and developed across all the industrial stone tools phases: Oldowan, Acheulian, Levallois-Acheulian, Mousterian, Late Paleolithic. Three main traditions are detected, depending from the local raw material that has been used for making tools: flint from the Caspian to the Pre-Irtysh, chalcedony in the Karatau range, quartzite in the Pre-Balkhash.

During the Late Paleolithic (35-8 ka BP) the Kazakhstan territory represented the crossroad of the colonization of Eastern-Northern Europe and Siberia and, from here, of the New World.

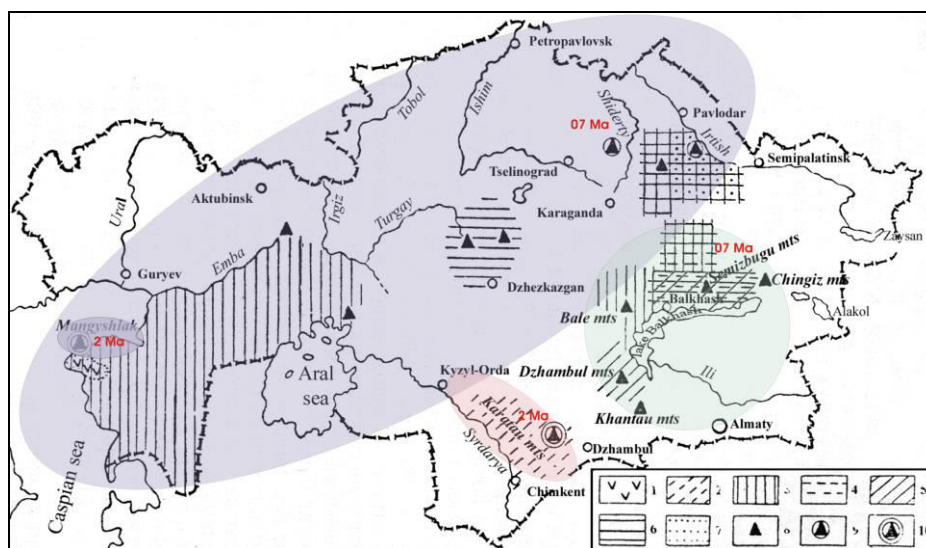


Fig 16 - Paleolithic cultures of Kazakhstan (3 main traditions related to 3 different rock materials) (A. Medoev 1981)

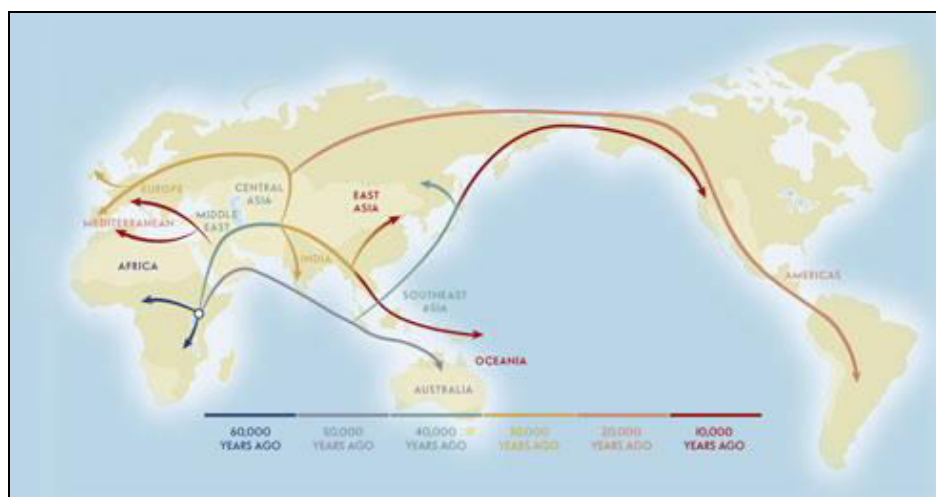


Fig 17 - DNA based reconstruction of the diffusion of *Homo sapiens sapiens* across NW Central Asia (Joyce Pendola 2007)

2.2 - The Neolithic (7000-4000 BP)

In Kazakhstan the end of the Paleolithic is followed by an unfavorable cool-dry climate so only in the Aralo-Caspian region and at the borders with W-Siberia could develop Mesolithic cultures of local tradition. Then, during the hot-wet Holocene climatic optimum (Atlantic period, 7500-5200 BP) and the formation of the steppe zone, **Neolithic** cultures with southern (Middle East) and northern (W-Siberia) influences populated the shores of all rivers and lakes of Kazakhstan, which at the time were twice more numerous than today. The Kelteminar culture (7000-4000 BP) developed in W and S KZ,

and few cultures of W-Siberian origin in Central and North KZ: the Mokhandjar culture in the Urals and the Atbasar culture in Central and North KZ (both part of the Shigir culture), and the Ust-Narym in the Altai (part of the Bolshemys culture). Also a significant Eneolithic (Copper age) culture, unrelated to the ones spoken above, is documented in N-KZ, the one of the Botai horse hunters and domesticators (5700-5100 BP).

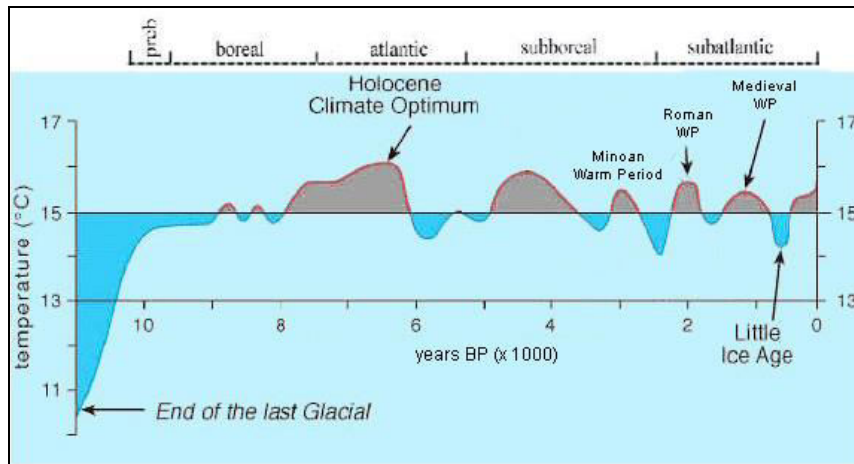


Fig 18 - Average near-surface temperatures of the N-Hemisphere during the past 11000 years (Dansgaard et al. 1969, and Schonwiese 1995)

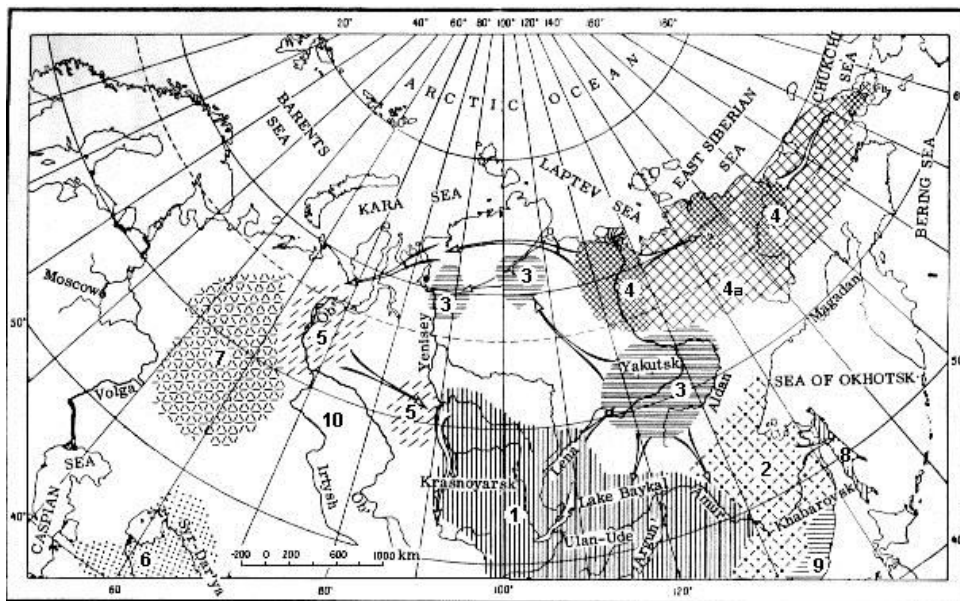


Fig 18.1- Map of Neolithic cultures of Siberia and Kazakhstan. Cultures: 1- Baikal; 2- Amur; 3- Central Lena; 4- Lower Lena; 4a- Lower Lena (presumed); 5- Ust-Tartas, Ob; 6- Keltiminar; 7- Shigir (Ural); 8- Sakhalin; 9- Maritime (shell mounds); 10- Bolshemys (Altai)

2.3 - The Bronze age (2000-800 BC)

Around 2800 BC, with the establishment in the Central Asian territories of a second longstanding pluvial phase, the eastern part (Indo-Iranian) of the Indo-European group spread from the north of the Black Sea eastward to the Urals and the Altai along the relatively cool-wet northern route, and from here, at the start of the **Bronze age** in 2000 BC, to Central and South Kazakhstan and further south along the piedmont route (Andronovo culture). They were semi-settled mix-farming pastoralist communities that moved by wagons with herds of cattle, fought with war chariots, and left a fantastic petroglyph record where images of bulls and chariots are main subjects. They gravitated around natural pastures and copper and tin deposits, the extraction of which during the Late Bronze made of North

and Central KZ the most important metallurgic province of Eurasia, supporting the ethno-genesis of the Indo-Aryan and then, around 1500 BC, of proto-Iranian and proto-Turkic groups. The Bronze age period represented for Kazakhstan the first of its three historical phases of international business and trade (2000-800 BC), the second being the medieval exploitation of the NW Tianshan silver deposits for the Eurasian monetary system (600-1200 AD), and the third being the present industrial extraction and commercialization of the energy resources of oil and uranium.

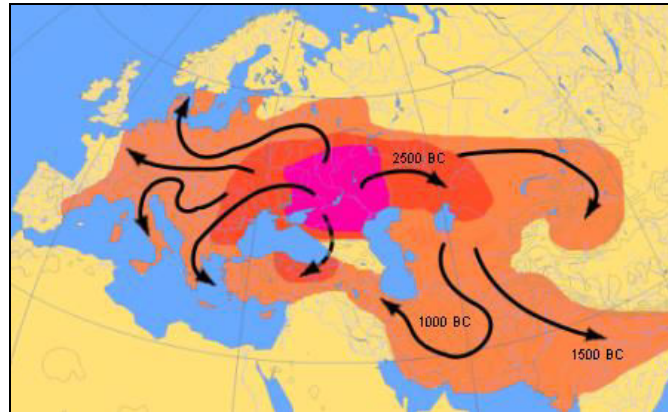


Fig 19 - Indo-European diffusion (K. Kuriakis 2007)



Fig 20 - Tamgaly, Bronze age archaeo-complex. Red dots: houses; red boxes: cemeteries; violet dots: petroglyphs (XVIII-IX BC) (aerial photo R. Sala)



Fig 21 - Auroch (*bos primigenius*), worshipped from the right and killed from the left. Kujabasy valley-14, Chu-Ili mts, (XV BC) (photo R. Sala)

2.4 - The formation of the nomadic pastoralist confederations (800 BC - 1800 AD)

The *Early Iron* epoch (800 BC - 500 AD) sees in Central Asia and Kazakhstan the genesis of a socio-military phenomenon of worldwide importance: the riding of the horse and the formation of *nomadic mounted pastoralist confederations* (starting from the Cimmerians, Scythians, Sakas and Huns until the Turks, Mongols and Jungars). These communities, inheritors of a millennial experience of pastoralism, have their economy based on mobile stockbreeding of sheep and horses assemblages in semidesert and steppe habitats. On the back of their horses, they roamed all the grasslands from Manchuria to Hungary, all the steppe zone that cuts latitudinally the entire Eurasian continent and that from this time on will constitute the homogeneous ethno-genetic niche of Iranian people in its western part and of Turkic peoples in the east. They are tribal societies, patriarchal and hierarchic; ancestors and genealogies are most important and so are hypertrophic funerary monuments. The “totemic” animal switches from the bull to the ram, which still today in Central Asia plays as most important archetype. Their main relation with the external world is the import or the booty of prestigious goods.

From 800 BC to 1700 AD (i.e. the advent of the artillery) confederations of mounted nomads constituted the most powerful warfare system of the world, based on horse power and steppe logistics: Europe and China are still under the shock of it. Their political structure grew from tribe (Sakas, 700-200 BC) to chiefdom (Huns, Yuezhi, Wusun, 200 BC - 500 AD) to khaganate (Turks, 500-1200 AD) to empire (Mongols, Jungars, 1300-1750 AD). Concomitantly grew their strength and impact. They arrived to challenge and sometimes to trespass the steppe borders in every direction but in different forms, depending from the steppe morphology. On the east, where the Mongolian steppes are separated from N-China by extreme deserts, the cultural interaction between the nomadic and settled worlds could happen only as clashes between formidable armies. On the west, where a clear frontline is established between steppe of one side and a forested or agricultural landscape on the other, the confrontation has been a constant pressure without deep intermingling. On the centre (Kazakhstan and Transoxiana), where the steppes merge progressively with the southern deserts of Bactria and Middle East through a series of desert oases, gradual adaptations were possible and the confrontation between the two worlds resulted milder and favored all along history successful displacements and symbioses.

Aside their military skills, the nomadic tribes developed very ingenious methods of stockbreeding and of water provision in arid landscapes. Their mobility and environmental awareness brought the exploitation by seasonal transhumances of the resources of mountains, steppes and semideserts to a level still unsurpassed. They managed springs and underground water by devices that would astonish the modern hydrogeologist. Moreover, deeply involved in the activity of the caravan routes across the Eurasian continent, they favored the interaction between the surrounding civilizations of Middle East, Europe, China and India.



Fig 22 - Eurasian steppe belt (Encyclopaedia Britannica)



Fig 23 - Tribes of Central Asia in 650 BC (*World History Maps by Thomas Lessman*)



Fig 24 - Issyk kurgan complex (*Semirechie*) (IV BC) (*aerial photo R. Sala*)

2.5 - The Medieval urbanization of the Syrdarya and of the Tianshan piedmonts

Proto-urban structures appeared in SW Central Asia around the V millennium BC, together with primitive irrigation agriculture; and in the Kopet-Dag, Bactria, Transoxiana and Khorezm developed uninterruptedly until modern times with very specific features, so that it is possible to speak of a Central Asian **urban civilization**.

In Kazakhstan the first urban structures appeared and developed always in the context of nomadic pastoralist cultures. They started only during the Early Iron and as a whole they concerned only in the southern regions: the Syrdarya river and the Northern Tianshan piedmonts.

On the middle Syrdarya agricultural towns appear in the VI BC, expand between the I-VIII AD, start to decay progressively after the Mongol invasion (XIII AD), and only in the middle Syrdarya few towns (Turkestan, Chimkent) are functioning until the Russian colonization of the XIX AD. Towns have here an organic agro-commercial morphology (tobe).

On the Tienshan piedmonts the urban process practically starts in the VI AD under Turkic rule, together with the exploitation of the silver resources of the NW Tienshan mountains and the blossoming of international trade along the northern branch of the Silk Road; it peaks between the VIII and XII AD; and is totally dismantled shortly after the Mongol invasion (XIII-XIV AD). Most of the towns have here a planned military morphology (tortkul). A subsequent short-lived urban phase reappears during the XVII-XVIII AD in Semirechie and East Kazakhstan in the form of walled military and religious structures built under the Oirat empire (West Mongols).

A general conversion to pastoralism characterizes the post-Mongol times until the Russian colonization of the end of the XIX century.

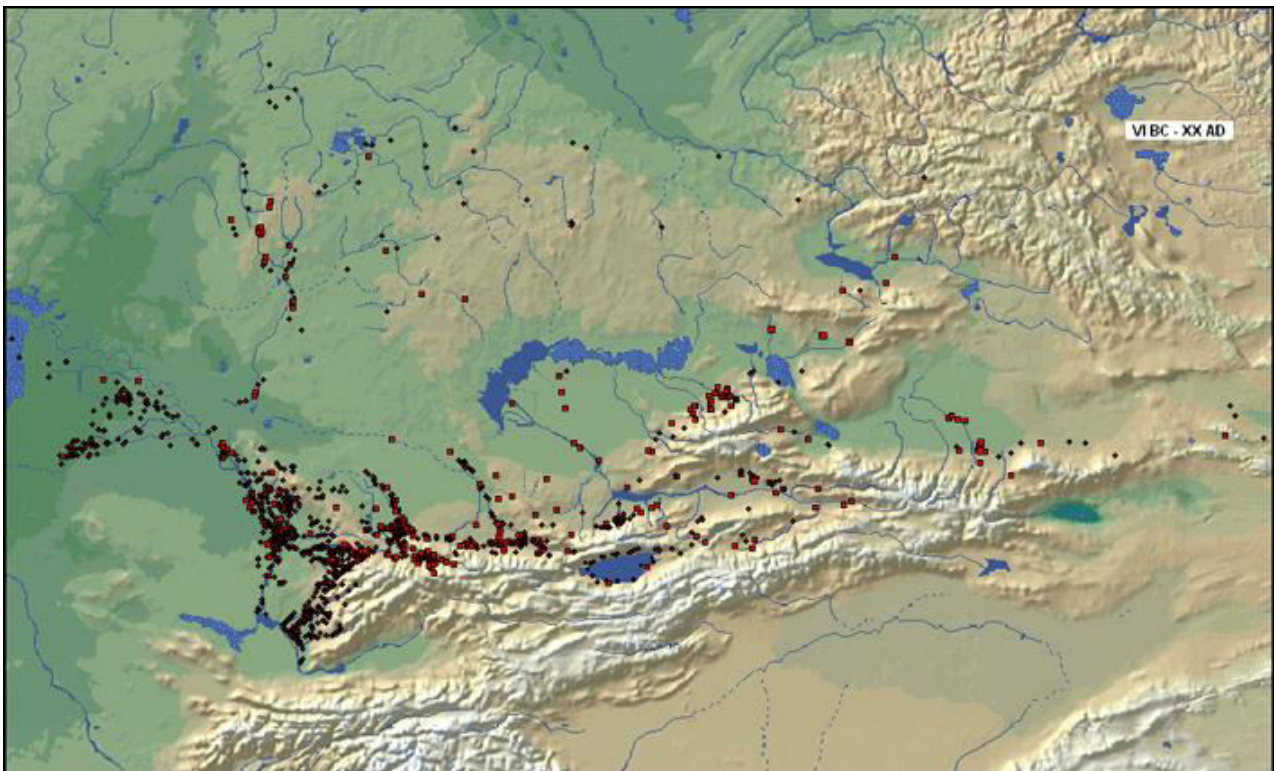


Fig 25 - Medieval urban structures of middle-low Syrdarya, N-Tienshan (inclusive of NE-Tienshan) and Central Kazakhstan (VI BC - XIX AD) (R. Sala)

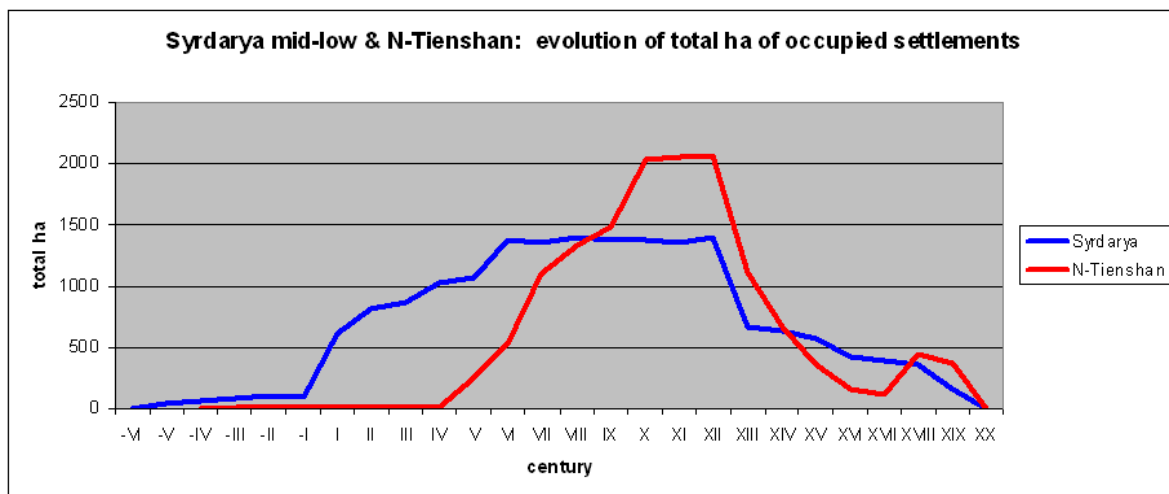


Fig 26 - Development of total urban area of middle-low Syrdarya and N-Tienshan (inclusive of NE-Tienshan) (VI BC – XIX AD) (R. Sala)



Fig 27 - Tobe of medieval Otrar (in the Arys delta, South Kazakhstan) (I-XVIII AD). View to SE (aerial photo by R. Sala)



Fig 28 - Tortkul Kyzylkorgan (in the lower Talas delta, N-Tianshan piedmonts) (VII-XII AD). View to NW (aerial photo by R. Sala)

3 - CULTURAL REGIONS AND CULTURAL LANDSCAPES OF KAZAKHSTAN

The surface morphological features of the environment, i.e. the physical structure represented by relief (landforms) and the biotic cover represented by vegetation, animals and humans, are termed *landscape* or *natural landscape*. The term, which means “land-view”, emphasizes the visual approach to the environmental system. Geomorphological and ecological anomalies support the spatial partition of landscapes into more homogeneous units called by geomorphology “*zones*” and by ecology “*niches*”.

A landscape, when endowed with anomalies provoked by human activities, is spoken as *cultural landscape*, and its spatial partitions are called *places, loci* or *locales*.

Natural landscapes are generally classified by considering relief and vegetation characters, which can be done in several ways¹. In this paper, for the purpose of simplicity, we consider as natural landscapes the 18 vegetation belt-zones spoken above.

3.1 - Cultural partition of the territory of Kazakhstan

On the Kazakhstan territory, aside with large homogeneities, are found significant geographical and cultural differences, which have been responsible of different patterns of landscape culturalization.

Different communities and cultures in different epochs are characterized by different technologies of land and water use and so by different sets of *locational factors* (LF), the most important being: raw materials, water resources, climate, relief, strategic economical opportunities, and socio-political control. Different sets of LF favored the occupation of different *cultural regions* and the deposition of particular behavioral (unintentional) and intentional marks that, together with their natural background, constitute specific *cultural landscapes*. Some of these marks are clearly visible, others can be spotted only by expert archaeologists.

Behavioral (unintentional) landscape marks are result of economical activities, like dwellings, water devices, mines, roads. Particularly important are the *intentional* landscape marks (petroglyphs, cemeteries, kurgans, oba) because they witness the visual perception (umwelt) and conceptualization, by part of the ancient inhabitants, of the intermingling of natural and behavioral landscapes: in that way they represent semiological markers of the theatrical structuring and use of the space by conscious actors and spectators. Also purely visual natural elements unconcerned by human exploitation (mountain peaks, lakes, etc) can take part in a cultural landscape in the form of significant *associative* elements.

A cultural region can consist of more than one natural landscape (*multi-landscape culture*), and one single natural landscape could have been culturalized by more than one culture during the same or during different epochs (*multi-cultural landscape*). So, several sub-zones must be considered, which makes the situation quite complex.

A simplification can be found by distinguishing first of all 5 main *chronological locational phases* characterized by specific sets of locational factors: Paleolithic, Neolithic, pastoralist cultures (from Bronze age to Early Iron to Late Middle Ages), Medieval agricultural-urban cultures and, finally, the modern industrial culture. Each locational phase will concern one or more cultural regions made of one or more natural landscapes, where it builds its specific cultural landscape.

Here below are listed: 5 main chrono-technological locational phases. Each locational phase is characterized by a particular set of LF, by few cultural regions of colonization and, for each cultural region, by the corresponding natural landscapes (belt-zones, of which the code is quoted in italic between brackets).

¹ The “Atlas of Kazakh SSR”, on the basis of 8 relief and 8 vegetation characters, classifies 30 natural landscapes that can be subdivided in 137 zones.

Paleolithic. The LF that conditioned the geographical (and also geomorphological) location of Paleolithic are *row materials and water*. Differences in row material point out 3 main cultural regions (see Fig 16). Each of the Paleolithic cultural regions concerns different natural landscapes, going from middle, northern and piedmont desert to desert steppe and dry steppes. (BeltZones 8, 7, 13, 6, 5)

Neolithic. The LF of Neolithic are all the mild surface *water resources* (mild streams, springs, ponds and lakes) of South and Central-North Kazakhstan (see Fig. 02). So, Neolithic cultural landscapes are found in the watered niches of the piedmont plains and middle deserts of South Kazakhstan and of the low-mountain relief of Central KZ. (BZ 13, 12, 8, 7, 6).

Pastoralist cultures. The LF of pastoralist cultures are *water, climate and relief*, which is valid for the 3 main pastoralist phases in KZ: the semi-settled pastoralism of the Bronze age and the mobile pastoralism of the Early Nomads (Saka, Sarmatian) and of the Late Nomads (Turks, Mongols, Oirats, Kazakhs). The pastoralist colonization concerned the entire territory of KZ. (BZ 1-18)

The distribution of cultural regions and landscapes of pastoralist cultures, due to their long endurance of 3-4 millennia on the KZ territory, is complicated in space by significant geographic partitions, and in time by climatic changes and the introduction of more or less mobile stockbreeding strategies. In fact pastoralist strategies evolved during epochs from the technical and socio-political point of view, crossing few phases. During the Bronze age, arid conditions and metallurgic activities (actually, among the pastoralist LF of the Bronze epoch, due to the importance of metallurgy, also *row materials* would be better included) favored first of all the colonization by settled pastoralism of the North and Central Kazakhstan low-hills. When Bronze reached the mountain piedmonts, here mix-farming and mining started to be accompanied by seasonal altitudinal transhumances between semidesert plains and mountain meadows. The Early Iron pluvial phase supported the development of the steppe zone, which, together with horse riding, favored establishment all over Kazakhstan of latitudinal transhumances for the wide exploitation of all natural landscapes, steppes as well as deserts (Early Nomads). The full exploitation of the Kazakh territory by altitudinal transhumances and longitudinal migratory routes more 1000 km long characterize the stockbreeding techniques of the Late Nomads.

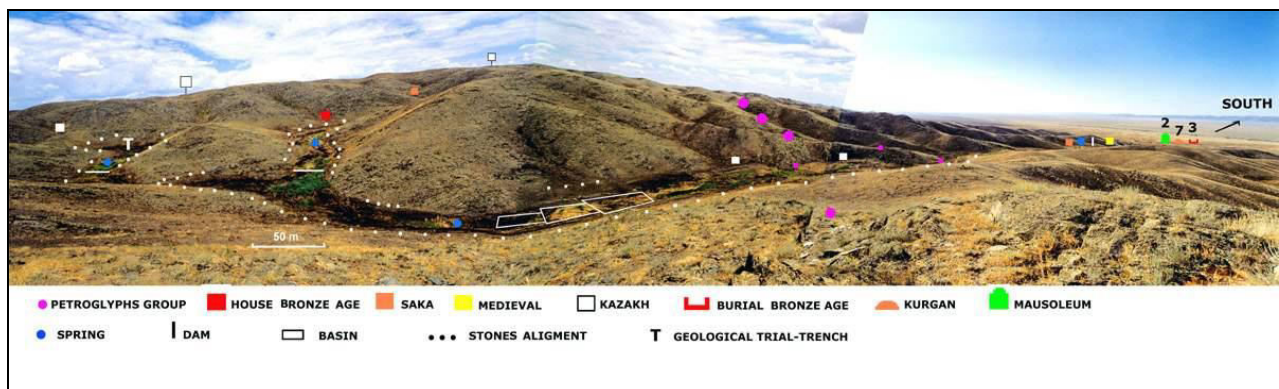


Fig 29 - Pastoralist culturalization by settlements, hydrological devices and tombs of the 3 km long Kuljabasy valley-5, Chu-Ili mountains (1500 BC - 1800 AD) (elaborated by R. Sala)

Altogether, the land and water use of pastoralist societies all along history happened in the frame of a latitudinal and longitudinal partition of the KZ territory into $2 \times 3 = 6$ cultural regions (see Fig. 31).

- There are 2 main latitudinal partitions between deserts in the south and steppes in the north, based on *climatic latitudinal* differences. In the southern deserts, because the scarce snow-cover, mobile open air pastoralism can be implemented all year round, which favors the establishment of several small independent very mobile pastoralist communities. Instead in the northern steppes, because the consistent snow-cover, stockbreeding requires summer foddering activities, which promotes a more sedentary life, stronger social cooperation and eventually state formation.

- Then there are 3 main longitudinal partitions distinguishing east, central and west Kazakhstan, based on *climatic altitudinal-latitude* differences and separated by extreme deserts. East and south-east Kazakhstan are characterized by meadows in mountains and steppes and semi-desert in plains, supporting pastoralist vertical transhumances, piedmont agriculture, mining activities and a convenient transport way along the piedmont corridor. Central Kazakhstan is characterized by the granitic low-hills and low-mountains (1500 m asl) of the Kazakhstan platform, rich in mineral resources and summer pastures, attracting migrations from all directions. West Kazakhstan, very flat, clayish and arid, constitutes a different system: in the north the Pre-Uralian steppes provide summer pastures; in the south deserts (Sam, Barsuki, Pre-Aralski Karakum, Ustyurt) are scattered with huge landlocked salty water basins, of which the banks constituted winter itineraries for mobile shepherds and merchant caravans. The harsh conditions of such environment favored the rise of most warlike tribes (Scythians, Massagetae, Sarmatians, Alans, ...and finally Adai).

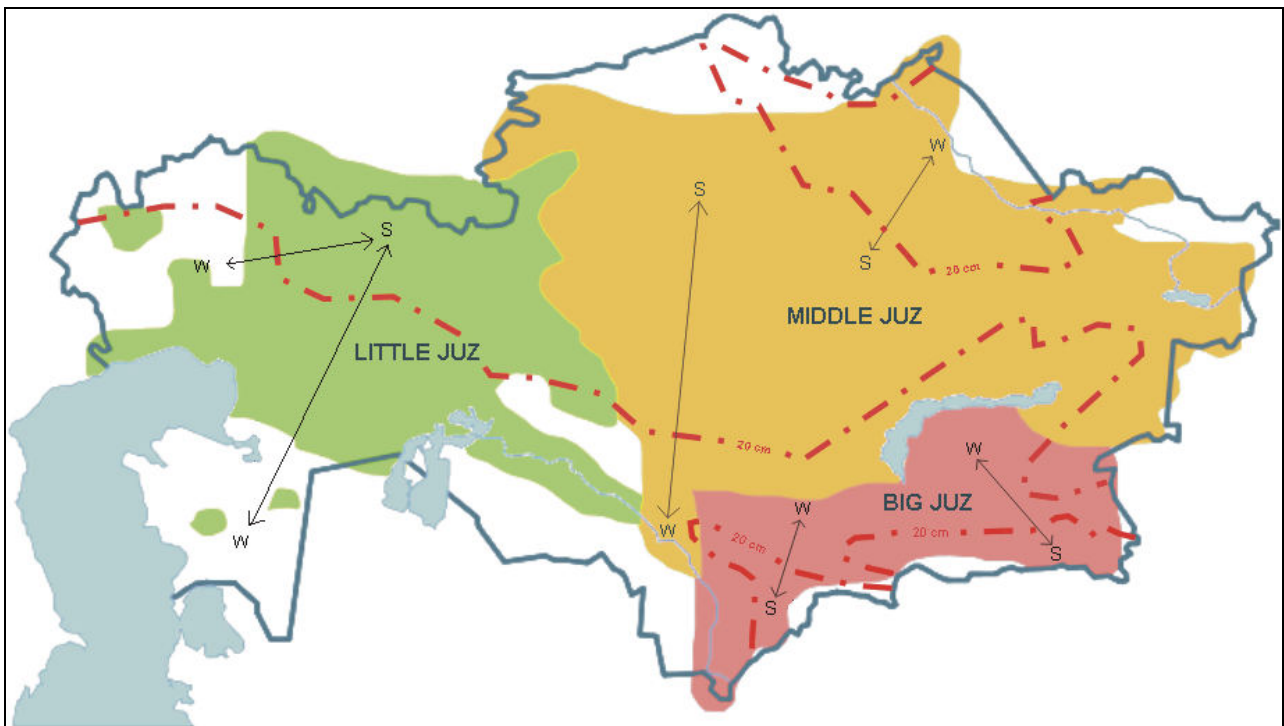


Fig 31 - Geographical distribution and pastoralist routes of the 3 Kazakh *juz* (large tribes) during the XVIII AD (elaborated by R. Sala). From W to E: Little, Middle, Big *juz*. Red line: yearly average snow cover of 20 cm. It is crossed by transhumance lines: W winter camps in deserts; S summer camps in mountains, hills and northern steppes. The itineraries of the 3 *juz* don't intersect each other.

Here below are provided 3 examples of territorial distribution of pastoralist culture: the general tripartition of the pastoralist use of KZ territory; the landscape proclivities in the massive displacements of pastoralist tribes; and the interaction between pastoralist, metallurgist and agro-urban cultures.

1 - The internal organization of the Kazakh tribes of the last 5 centuries is related to the implementation of longitudinal and altitudinal transhumances, which ended up circumscribed within three regions separated by formidable deserts. These are multi-landscape cultural regions characterized by the complementary use of at least 2 different natural landscapes as winter and as summer pastures. In that way became established 3 *juz* (a term meaning 'tribal confederation' as well as 'ecological region'): the Big *Juz* used altitudinal nomadic routes between piedmonts deserts and alpine meadows (as did the Sakas in the I millennium BC); the Middle and the Little *Juz* used longitudinal routes between southern deserts and northern steppes (as respectively did Kipchak in Medieval times and Sarmatians during the Early Iron). (see Fig. 31)

2 - Concerning the massive displacement of nomadic mounted tribes and confederation, it always happened along similar landscapes, mainly along the steppe belt that supported logistically their horses

(Scythians, Sarmatians, Huns, Alans, Oghuz, Kipchak, etc.). And, when happened with switches between landscapes (i.e. from steppe to semidesert or viceversa), it required century long adaptations (Early Turks, Oghuz, Seljuk).

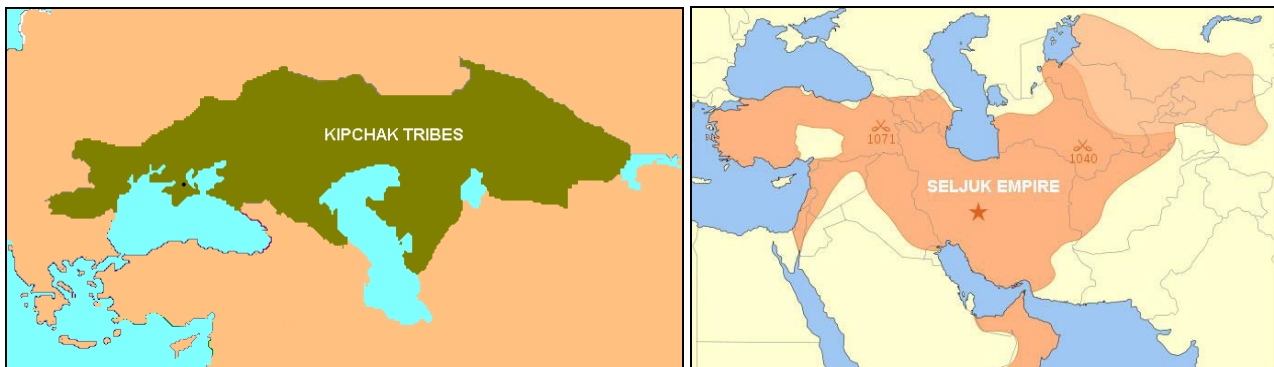


Fig 30 - Territorial distribution of Kipchak and Seljuk tribes during the XI century AD (Wikipedia)

3 - As a whole, during the last 4000 years, the Kazakhstan territory, and in particular the Syrdarya and Northern Tienshan piedmonts regions, saw continuously the interaction of mobile pastoralist and settled agricultural and metallurgic cultures, in different intensity depending from business opportunities and climatic regimes. Five phases can be distinguished, alternating 3 phases dominated by metallurgic-agro-urban activities and 2 phases clearly pastoralist:

- Phase 1 : metallurgic centers supported by semi-settled pastoralist activities characterize the arid Bronze age period (2200-800 BC);
- Phase 2 and 4 : a mobile pastoralist way of life is predominant during the Early Iron (800 BC - 500 AD) and then again during the Late Medieval pluvial phases (1450 -1850 AD);
- Phase 3 and 5 : agro-urban and metallurgic complexes play a major role during the arid Medieval (500-1450 AD) and modern periods (1850-2000 AD).

In that sense the human cultures of Kazakhstan show a structural high resilience, being capable of regulation to climatic reversal by combining or switching between different economical modes of production. This character is clearly reflected in the establishment of multi-cultural (pastoralist, metallurgic, agricultural, urban, and commercial) landscapes like the ones of the Syrdarya region and of the Northern Tienshan piedmonts.

Medieval urban cultures. The LF of the Medieval urban cultures are *strategic economical opportunities*: irrigation agriculture, mining, and trade. The variety of economic strategies explains the spread of medieval cultural regions in quite different landscapes: at the head of river deltas tamed by irrigation schemes (Syrdarya, Talas, Chu, upper Ili, Northeastern Tienshan streams); in the mountain zone near the rich polymetal mines of the Chach and Talas valleys; and along commercial corridors (east-west along the Syrdarya and the Northern Tienshan piedmonts, northward from the Syrdarya region across the Ulytau range) (see Fig. 25). Moreover, the process of urbanization, which had irrigated agriculture, metallurgy and interregional commerce as determinant economical background, didn't exclude pastoralist groups but reorganized them in the context of a complex economy, i.e. giving rise to several walled towns and villages strictly functional to foddering and stockbreeding activities. (BZ 8, 9, 13, 12)

Russian and Soviet periods. The main characteristic of the Russian and Soviet colonization has been the introduction of new advanced hydrological techniques (deep wells, artesian wells, long canals and pipes), which definitely freed the settlement location patterns from hydrological dependence and favored their larger diffusion all over the territory. LF of this modern phase, together with *strategic economical opportunities*, are centralized political plans of *politico-administrative territorial control*. (BZ 1-18)

3.2 – Mapping the cultural regions and cultural landscapes of Kazakhstan

Here below is described the geographic distribution of pastoralist, Paleolithic, Neolithic and Medieval cultures by pointing out their cultural regions (for each techno-chronological phase 3-4 cultural regions are detected), the corresponding natural landscapes (belt zones, with code in italic between brackets), and their most typical monuments. In that way a general map of the main cultural regions and landscapes of Kazakhstan is elaborated. An exemplary attempt. (Fig 32).

The **Paleolithic** is represented by three different traditions and corresponding cultural regions as shown in Fig 16: in locales of the Caspian shores (*Belt Zone 8*) and of the Pre-Irtysh (*BZ 5*); on the Karatau range of South Kazakhstan (*BZ 13*); and in the western and northern Pre-Balkhash region (*BZ 8, 7*). Peripheral sites are found in the Pre-Aral, Ulutay, Semirechie piedmonts and Charyn region.

The **Neolithic** is located on the shore of lakes and ponds and along the banks of mild river courses. More precisely Neolithic landscapes are found: on the shores of the Caspian, Aral and Balkhash lakes and along the banks of the Syrdarya, Arys, Talas, Chu and Ili delta distributaries (*BZ 8, 7*); in the piedmont band paralleling the Tianshan range at the border of the desert, in the surroundings of perennial springs and evaporation basins (*BZ 13, 12*); and near ponds and streams of the relatively wet and elevated areas of Central-North KZ (*BZ 7, 6*). All together 4 most important regions are detected: Ustyurt, Syrdarya, N-Tianshan and C-N-Kazakhstan.

Remains of both Paleolithic and Neolithic cultures are technogenic surface layers of spalls and stone tools very visible in erosive areas that have been used as campsites or workshop-sites, plus few petroglyph executions.

Pastoralist cultures, because their wide distribution and longstanding multi-millennial activity, arrived to culturalize the entire territory of Kazakhstan. More precisely, large circumscribed areas have been exploited and culturalized during the Bronze age by settled shepherd-metallurgists (mainly in proximity of copper and tin deposits), and the whole territory, including also deserts, by nomadic Early Iron and Ethnographic shepherds.

Both settled and nomadic pastoralist cultures show regional differences on the basis of the latitudinal bi-partition and the longitudinal tri-partition of the KZ territory spoken above, which allow to detect 3-6 pastoralist regions, altogether concerning all kinds of natural landscapes (*Belt Zones 1-18*).

The most evident traces of the use of the territory by part of settled Bronze age pastoralists are petroglyph sites and cist tombs circumscribed by a stone enclosure. Surficial remains of nomadic Early Iron and Early Medieval pastoralists are petroglyphs, kurgans, ruined housings and corrals near springs, stone henges in piedmonts, mining pits in mountains, and cairns (oba) on the top of positive relief forms in semideserts and deserts. Monumental traces of the Late Medieval (Ethnographic) shepherds are few petroglyphs and inscriptions (in Arabic or Tibetan alphabet), numerous ruined housings and corrals, small oval burial mounds and mausoleums, water devices (managed springs, water basins, karez, etc), and oba.

Ruins of Bronze age houses are generally invisible because covered by sediments and, when located in good habitats in proximity of perennial springs, are often superposed by the ruins of houses of all the following epochs. Petroglyphs of different periods are distinguishable by degree of patination, stratigraphy, styles and subjects.

Medieval urban agricultural landscapes are established along the active natural and artificial distributaries of the Syrdarya, Arys and Talas deltas (*BZ 8, 9, 13*), and also along the middle course of the Ili river and along all the piedmont streams of the Tianshan and Jungarian ranges, i.e. in a band between the Neolithic habitats spoken above and the mountain zone (*BZ 12*). Moreover, hundreds of medieval polymetal mines and walled metallurgic centers are located in the western Tianshan range (Chach and Talas) (*BZ 16*). Chronological and morphological differences suggest the partition of the Medieval urban landscapes in 3 main sub-regions: Syrdarya delta, Mid-Syrdarya, N-Tianshan piedmonts.

Remains of the medieval urbanization of Kazakhstan are very abundant and well preserved: walled towns and fortresses, mausoleums, irrigation canals, mining pits. Most impressive are the ruins of 2000 walled towns of different size and the related irrigation systems, distributed along the Syrdarya river and in the N-Tianshan piedmonts, between the Aral sea in the west and the Alakol lake in the east.

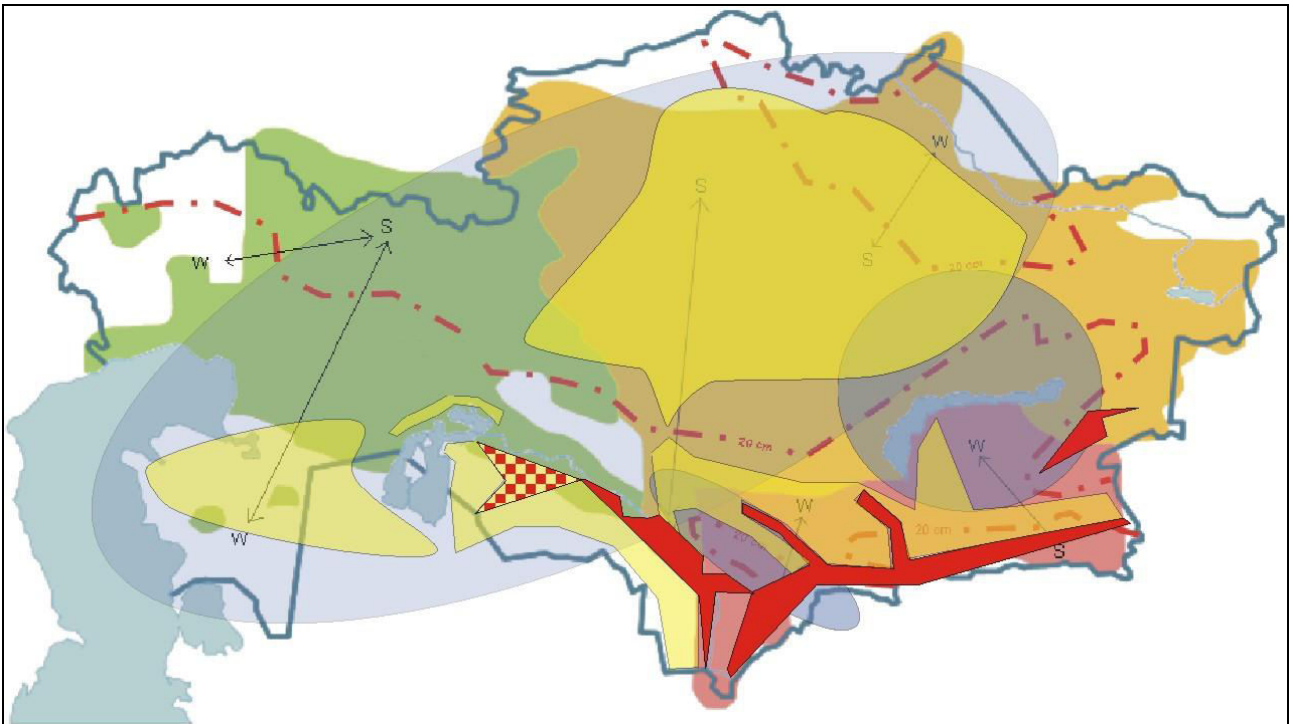


Fig 32 - Map of the cultural regions and cultural landscapes of Kazakhstan (elaborated by R. Sala) / Transparent bluish ovals are marking 3 regions corresponding to different Paleolithic traditions / Transparent yellow areas represent 4 main concentrations of lacustrine Neolithic landscapes / Solid background green-ochre-pink colors points to the three-parted (west, central, east) pastoralist landscape, covering all together the entire KZ territory, with red lines marking borders between seasonal pastures (S=summer, W=winter) and crossed by transhumance lines / Solid frontal red bands mark 3 main concentrations of Medieval urban landscapes.

REFERENCES

Atlas Kazakhskoi SSR, tome 1, Moscow 1982

- Aubekerov B, Sala R, Beardmore R (2005) Geo-archeology in Kazakhstan: paleo-geography, paleoclimate, location of monuments. In: Konusbaev A et alia (eds) *Socranenie i ispolzovanie obiectov kulturnogo i smeshannogo nasledia sovremennoi Centralnoi Azii*. Almaty, NIPI PMK <www.lgakz.org>
- Aubekerov B, Sala R, Nigmatova S (2003) Changes of Atmospheric Circulation, Paleoclimate and Paleogeography in the Tianshan-Balkhash System. In: *PAGES news vol. 11 n° 2-3*. <www.lgakz.org>
- Council of Europe (2000) *European Landscape Convention (ELC)*. Florence
- Masanov NE (2011) *Kochevaia tsivilizatsiia kazakhov: osnovy zhibiznedeyatel'nosti nomadnogo obschestva* (The nomadic civilization of the Kazakhs: the basic life of the nomadic society). Almaty, 2d ed., 740 p.
- McNeill W (1994) *Steppe*. Enc. Brit.
- Medoev A (1982) *Geokhronologia paleolita Kazakhstana* (Geochronology of the Paleolithic of Kazakhstan). Alma-Ata, Nauka, 64 p. (Sarsekov A. S. ed)
- Rachkovskoi EI, Volkova EA, Khrantsova VN (eds) (2003) *Botanicheskaya geografiia Kazakhstana i Srednei Azii v predelakh pustynnoi oblasti* (Botanical geography of Kazakhstan and Central Asia in desert regions). Saint-Petersburg, 424 p.
- Sala R (2012) Medieval urbanization of Mid-Low Syrdarya and Northern Tianshan: structure, development and environmental impact. In: Kubota J, Watanabe M (eds) "*Towards a sustainable society in Central Asia: an historical perspective on the future*", Kyoto, RIHN, pp. 59-74
- Turri E (2006 [1998]) *Il territorio come teatro: dal territorio vissuto al territorio rappresentato*. Venezia, Marsilio ed.
- Yerofeeva IE (ed) (2011) *Istoriko-kulturnyi atlas kazakhskogo naroda* (Historical-cultural atlas of the Kazakh people). Almaty, Print-S, 300 p.

ACRONYMS

- KZ** = Kazakhstan
BZ = belt-zone
LF = location factor
BP = before present
Ma = million years BP
ka = thousand years BP