

## **Afghanistan National Army uses Forest camouflage and Forests only cover two percent of the Country!**

In the past few months the media has been posting articles about how the U.S. taxpayers wasted 28 million dollars in a forest camouflage pattern for the Afghanistan National Army (ANA) that was never tested. This story came about from report (and an ongoing investigation) from SIGAR (Office of the Special Inspector General of Afghanistan Reconstruction). While the figure of 28 million dollars includes the 24+ million dollar difference between a special combat cut uniform the ANA selected like the one used by the U.S. Army, versus going with the older less expensive BDU cut, (as the Afghanistan Police use). The camouflage license to date for the ANA only accounts for just over 3 million dollars (not 28 million) so the cost savings over the next ten years estimated to be between 60-70 million by SIGAR is not coming from changing to a royalty free camouflage (the camouflage change will only save between 3-5 million over 10 years) but from the change in the uniform cut which accounts for most of the savings. The uniform cut refers to the design or assembly of the uniform such as pocket placement, zippers, buttons, collar type, fabric specification... The extra 24+ million spent on the uniform cut does not have anything to do with the camouflage pattern used.

The U.S. Army when confronted with the poor performance of their UCP (Universal Camouflage Pattern) used since 2004. Changed in 2010, but they did not select a royalty free pattern from Natick (U.S. Army Research Labs), as SIGAR is suggesting that should have occurred by the U.S. Military in Afghanistan in 2007 but the U.S. Army instead licensed a commercially available pattern called Multicam from Crye Precision out of Brooklyn, New York costing 323% more per uniform than the license from Hyperstealth for the Afghanistan Spec4ce Forest pattern. In 2014 the U.S. Army then changed to the Scorpion W2 pattern also developed by Crye Precision in 2002, those royalties to Crye are 17% more expensive than the royalty paid to Hyperstealth per ANA uniform.

In May 2011, Australia paid \$7.8 million USD to Crye Precision for their own Australian Multicam Pattern. (1)





Given that I, Guy Cramer, President/CEO of Hyperstealth Corp., have been working with many different country camouflage programs since 2003, let me point out that in most cases I do not have the ability to dictate what the country wants or ultimately selects as a pattern or color selection. I can offer suggestions but in the end, many select based on aesthetics (CDI factor = Chicks Dig It). I have had a few programs where the client will ask us for our recommendations – pattern and color but often I am given examples of what the client wants it to look like, quite often they want it to look more modern than what they currently use but similar attributes to what they have been using.

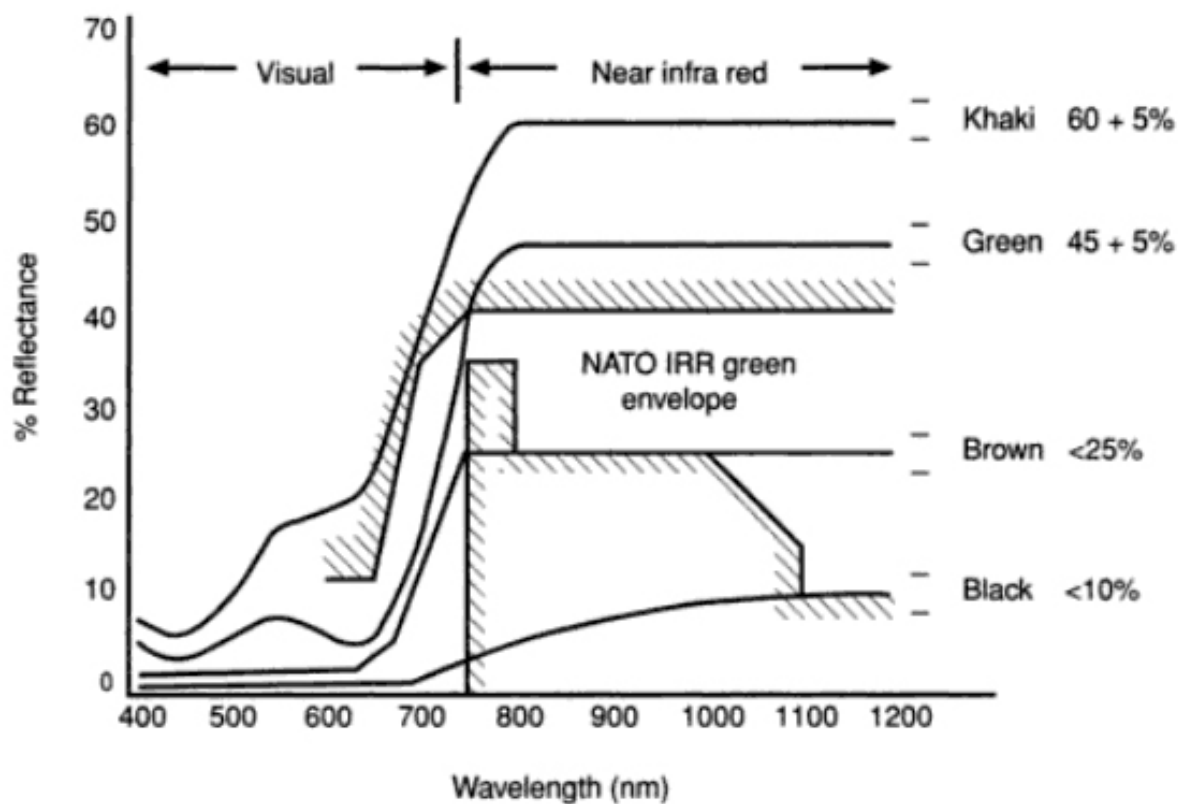
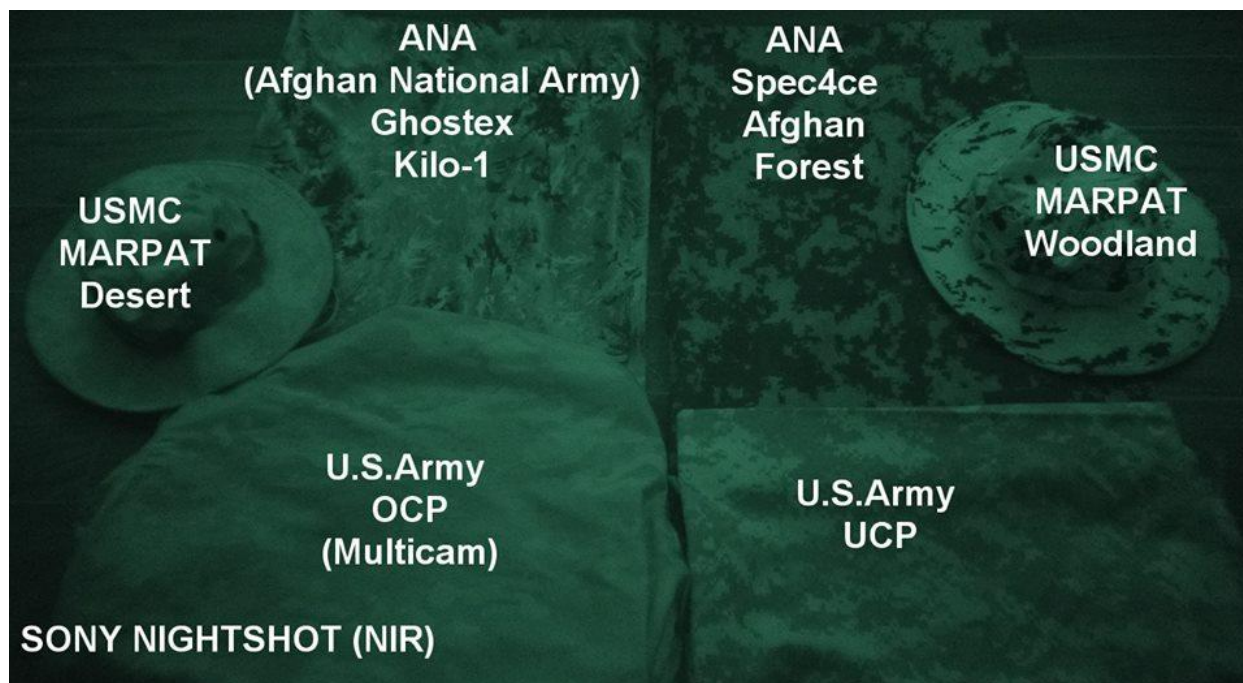
In the case of Afghanistan, at their request, we sent six different colorations of the same Spec4ce pattern; Woodland, Forest, Desert, Tropical, Urban and Metro (Night). They selected Forest, I do not know why they selected Forest coloration but let us look at a few items that may have contributed to that decision. The U.S. Government had been issuing the ANA their old Woodland camouflage, back in 2008 the Taliban was easily obtaining the same uniforms on the open market and infiltrating the ANA, I believe this is what brought about the decision to change to something not available to any adversary. The ANA Spec4ce Forest camouflage is highly restricted for use with the ANA only with special security features developed to control potential knock off uniforms.

Given past programs with other countries I assume that the decision may have been made based off the similar coloration with U.S. Woodland camouflage coloration they had been using from the U.S. Government up to this point.





However, there may have been further things considered. In 2008 the U.S. Army was conducting day missions and the ANA was conducting the night missions. The Spec4ce Forest pattern meets the NATO requirements for Infrared Reflection levels, something that none of the U.S. military branch patterns do as they are all either too bright or lack the contrast required to disrupt the target in the (NIR) night vision spectrum.



### 16.11 Reflectance curves for four-colour disruptively patterned textiles.

The Canadian Military in 2003 wanted to look different from the other coalition troops, This was after they began wearing their CADPAT Arid "Tan colored camouflage" uniforms, the green uniforms use a green camouflage pattern known as CADPAT TW (Temperate Woodland).

*The green uniforms will set the Canadians apart from U.S. soldiers and most German troops in Afghanistan, who wear sand-coloured uniforms in the warm, mountainous area.*

*"We have tans and greens. My decision is to start in greens," Gen. Leslie said in an interview. "I want [the Canadian soldiers] to be seen when they first arrive on the ground, so that people can differentiate them between everyone else. Most others are wearing tans."*

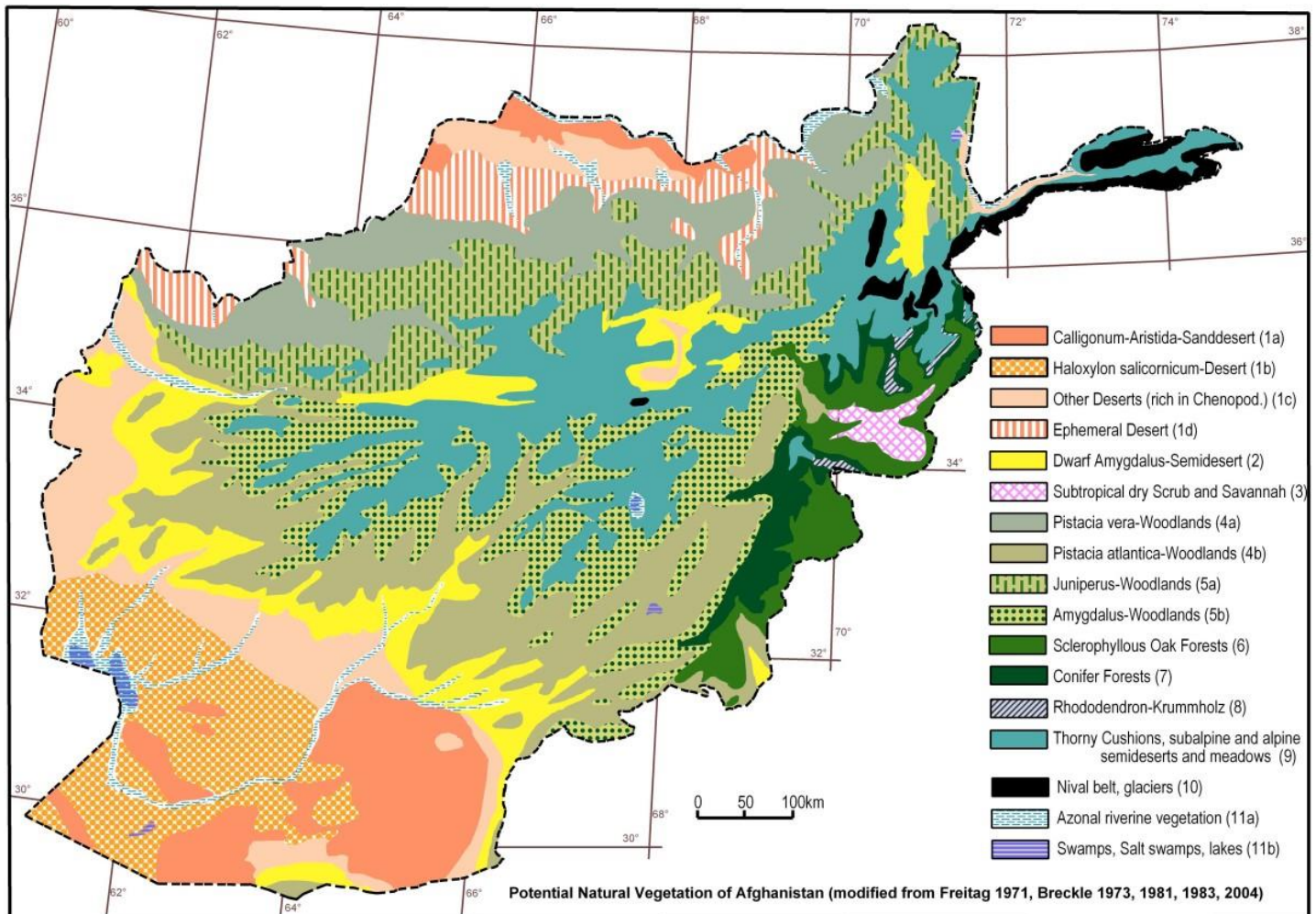
*Gen. Leslie said Canadian soldiers will wear green uniforms on sensitive nighttime missions.*

*"When you're up in the mountains and you're operating in a lights-out environment, the greens themselves offer better camouflage and concealment," Gen. Leslie said.(3)*

So not only does the ANA have an excellent camouflage to counter Night Vision they also have a better camouflage in the visual part of the spectrum for night missions.

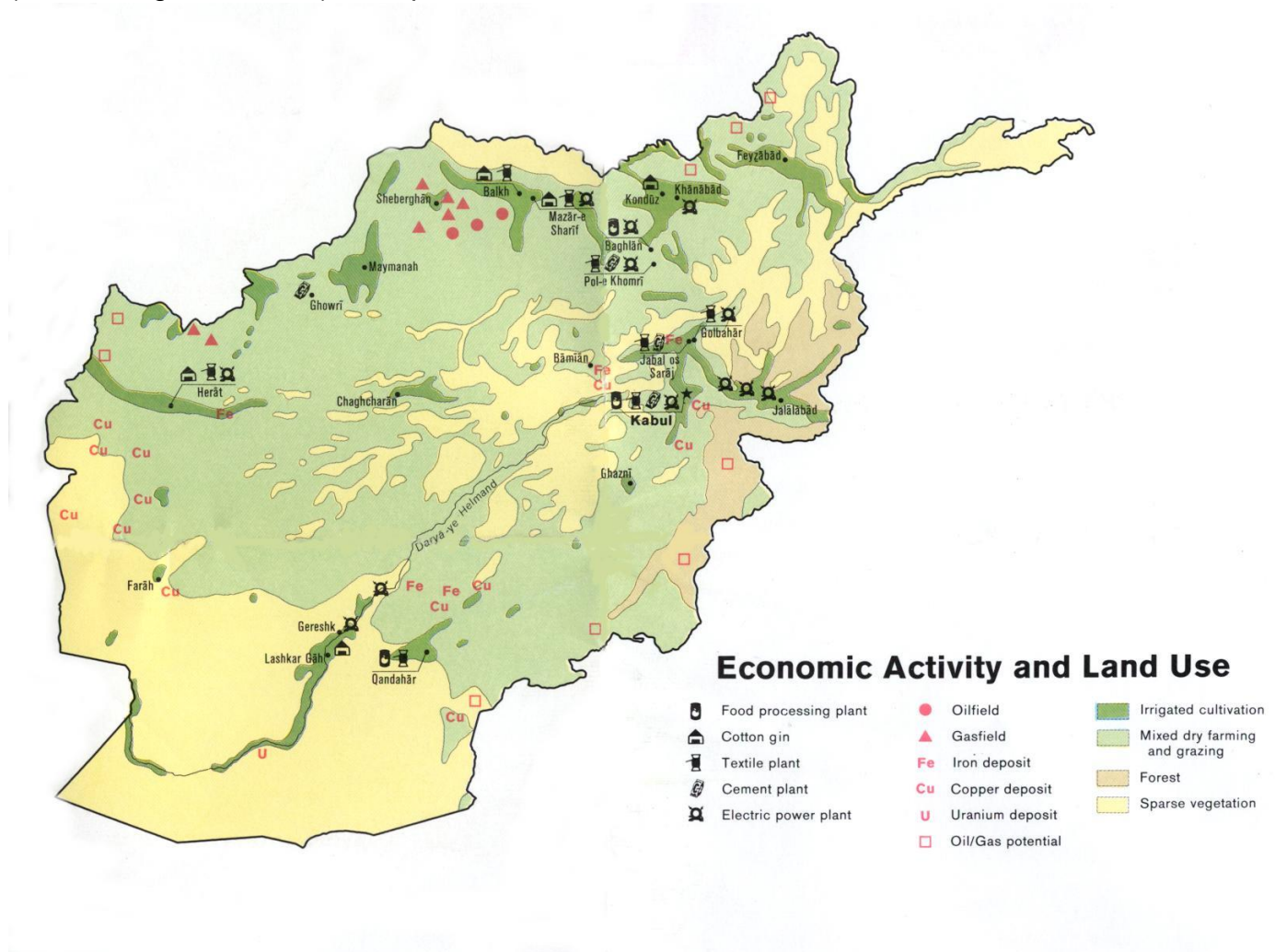
Their key argument by SIGAR is that only 2% of Afghanistan is covered in Forest. The only reason I called this particular pattern Forest is that I had already called the other coloration woodland, if I only had this coloration I would have called it woodland. The USMC MARPAT woodland camouflage was initially called MARPAT Forest in a few presentations. Semantics aside, the term forest in camouflage can also mean woodland.

When we look at the first Afghanistan map below, the argument can be made that only 2% are forests, however this does not mean that 98% of Afghanistan is barren desert. As you can see large areas fall into the woodland category.



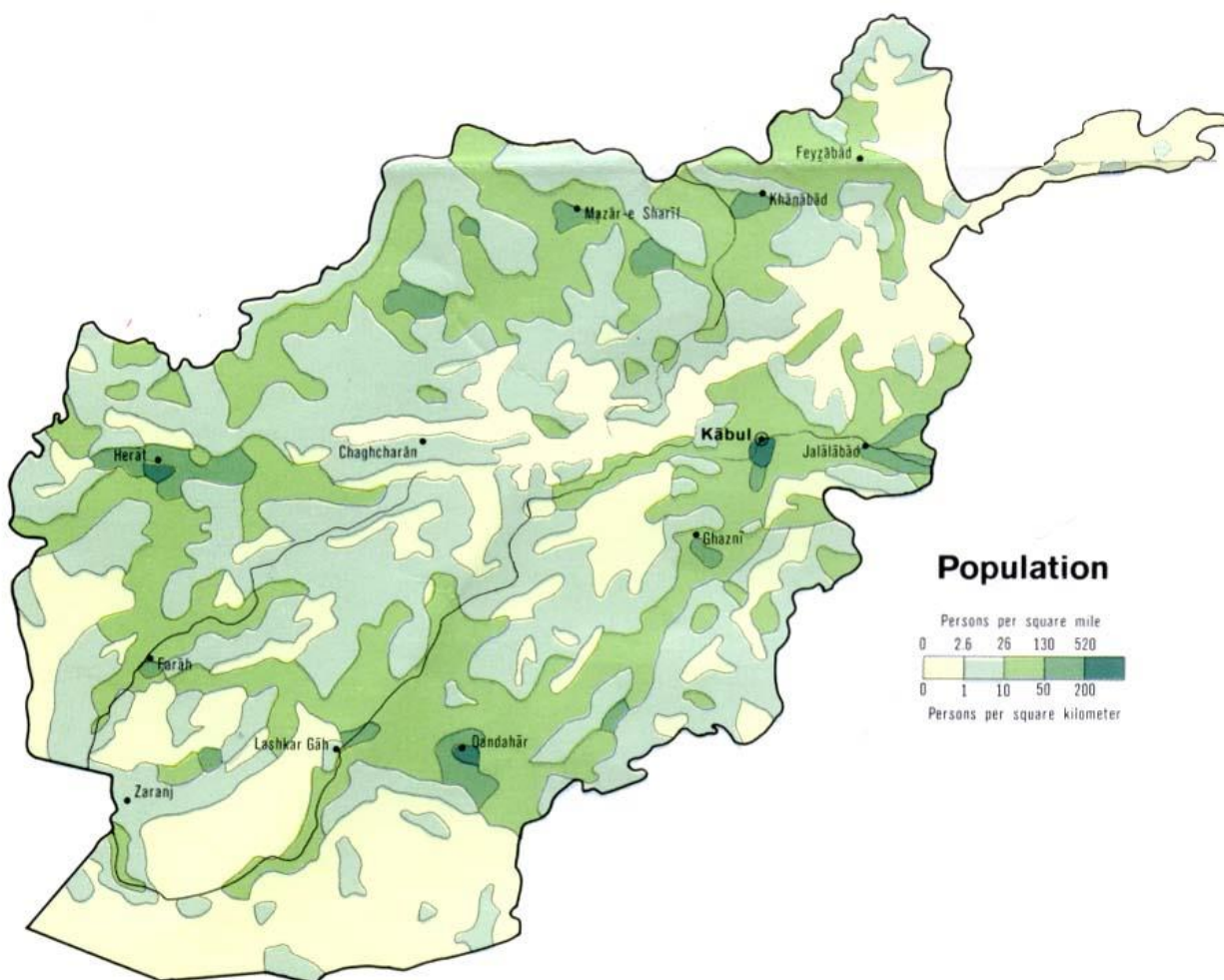
(4)

In the second map we can see that Afghanistan has vegetation in large regions. Sparse vegetation (Yellow/beige coloration) in map below.



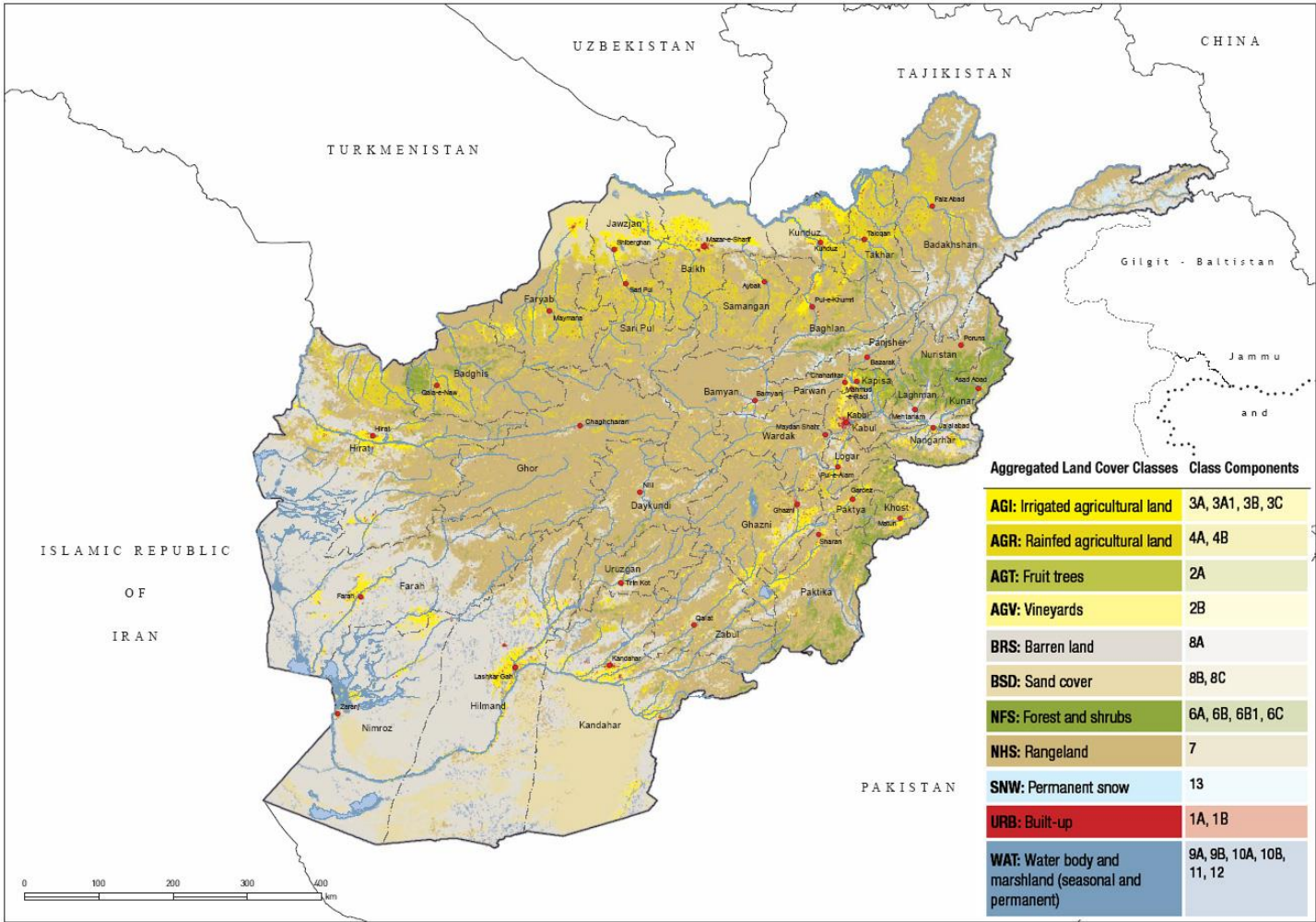


The map below shows the population distribution, most of which avoids the sparse vegetation regions



(6)

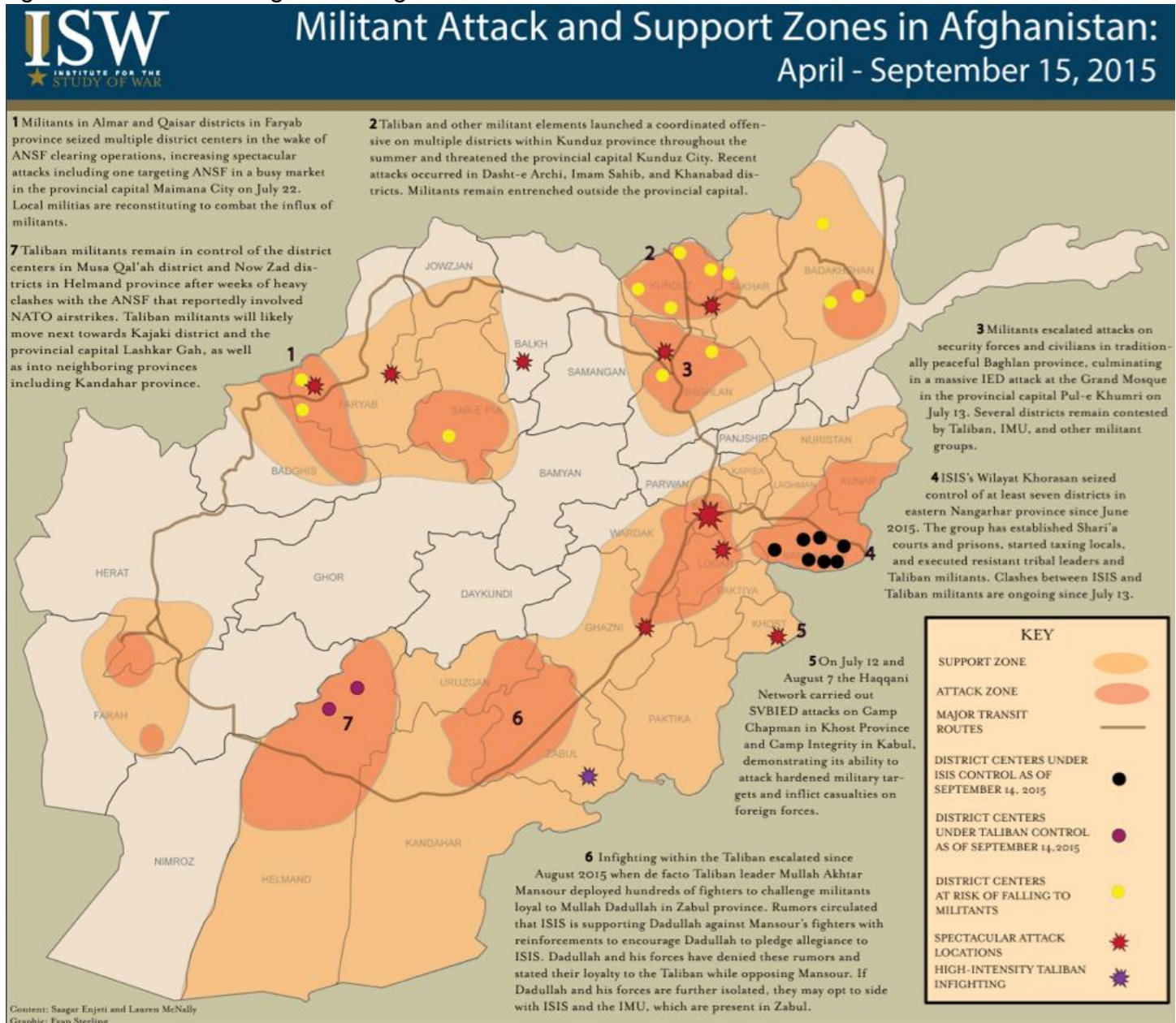
Afghanistan Aggregated Land cover classes map



(7)



Where is the combat taking place in Afghanistan? Most of it falls within the woodland, forest, agriculture or ravine vegetation regions.



Taliban elements and other militant groups are conducting operations across Afghanistan, including spectacular attacks against major population centers and U.S. bases. The Haqqani Network, a Taliban aligned-group, continues to pressure the ANSF and NATO forces with spectacular attacks in Kabul and Khost. Taliban elements are also conducting numerous ground assaults to seize district centers, especially in northern and southern Afghanistan. These campaigns comprised the 2015 warm weather from April 2015 – September 2015. There have been several notable developments following the announcement of the death of Mullah Omar on July 29. First, Taliban militants have claimed control of two district centers in Helmand on August 11 and August 26. Second, ISIS's Wilayat Khorasan have claimed control of seven district centers in Nangarhar over the course of July and September. Third, Taliban infighting has escalated as different factions compete and express varying positions on who should lead the Taliban movement.

Taliban factions are clashing in Zabol province, a historic safe haven for multiple groups including the Islamic Movement of Uzbekistan (IMU) and al-Qaeda. ISIS is reportedly reinforcing one faction under the leadership of Mullah Mohammed Dadullah, in a likely attempt to encourage the faction to defect. ISIS has already received pledges of allegiance from the (IMU), which is likely also active in the area. Drone strikes against al-Qaeda in neighboring Paktika province in September indicate that al-Qaeda may also be reinforcing the opposing Mullah Akhtar Mansour faction of the Taliban, which increases the stakes of Taliban infighting as well as the overall threat level in Afghanistan.

A staff writer at the Washington Post shared the following :

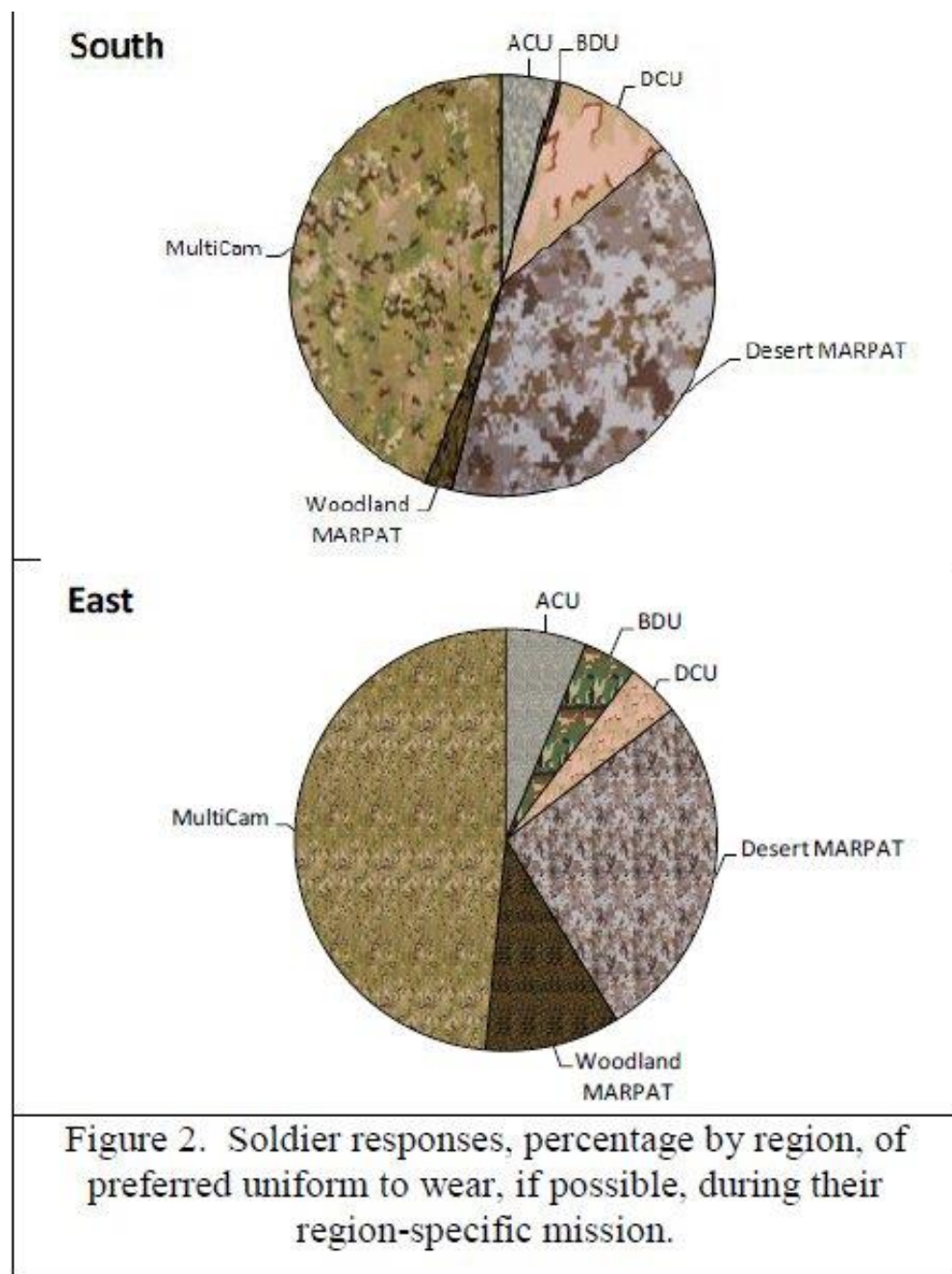
As USMC infantry battalions rotated into Helmand River Valley circa 2010-2011, units began ditching desert camouflage for woodland.



(9)



In a camouflage study conducted by Natick (U.S. Army) in 2009 they polled soldiers that had been in Afghanistan and asked for their preference in camouflage used in the south (high percentage of Barren) and the East (mixture of woodland, forest, mountain...). I find the East results interesting in that the approximately 10% of the soldiers would have selected Woodland MARPAT as their camouflage, does that make their decision stupid or incompetent? These results do show that there is a greater need for green in the camouflage in the east over the south.



(10)

Another interesting item from this study discussed above is that out of the U.S. Army soldiers surveyed, 3.6 times more soldiers deployed to the East over those deployed in the South. *Soldiers had been deployed to the eastern (1598) or southern region (445) of Afghanistan with deployments occurring during all four seasons.* Given that most of combat is in the East and over 65% of U.S. Army soldiers would select patterns with some green in them; Multicam, Woodland MARPAT or the Woodland BDU, was the Afghanistan selection of this Spec4ce Forest color scheme idiotic as the U.S. Government claims or is there a legitimate basis for selecting this color scheme?

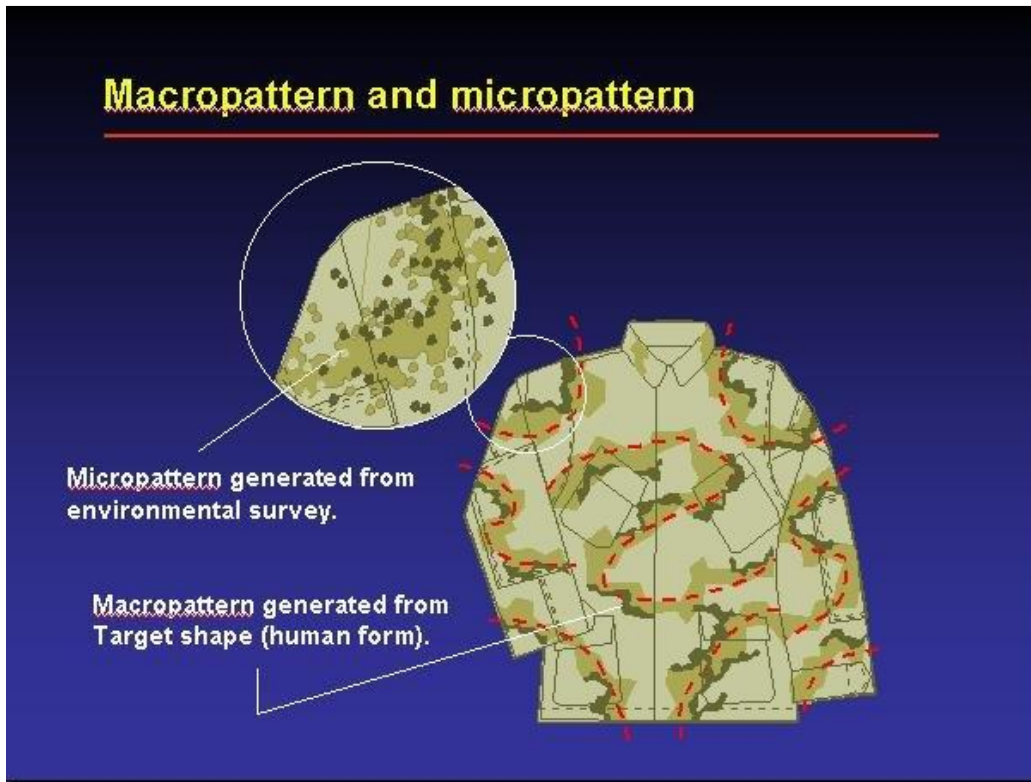


Below is another NATICK (U.S. Army) test conducted in 2007 where they had been sent a Spec4ce Forest uniform – they incorrectly called it “Spec4 Woodland” as you can see below. The overall coloration of our Spec4ce is not as dark as Woodland MARPAT and not as bright as Multicam, these images are color corrected to match the lighting conditions. The increased contrast between colors and the overall brightness could allow it to function better in more areas of Afghanistan than Woodland MARPAT does. I included the Iraq pattern as a reference as I believe it is close (if not the same) to the ANA Special Forces woodland BDU pattern provided by the U.S. Government.

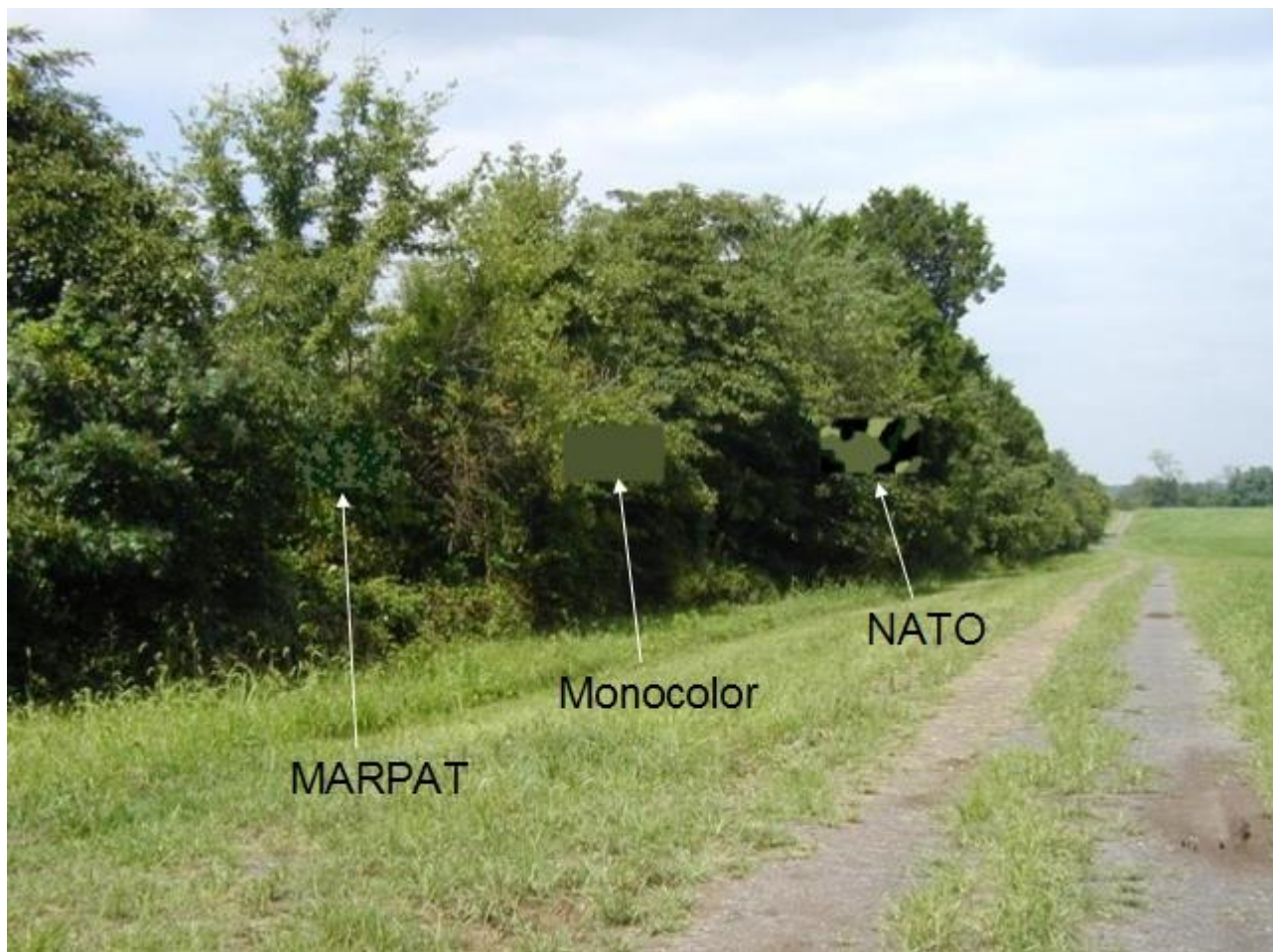
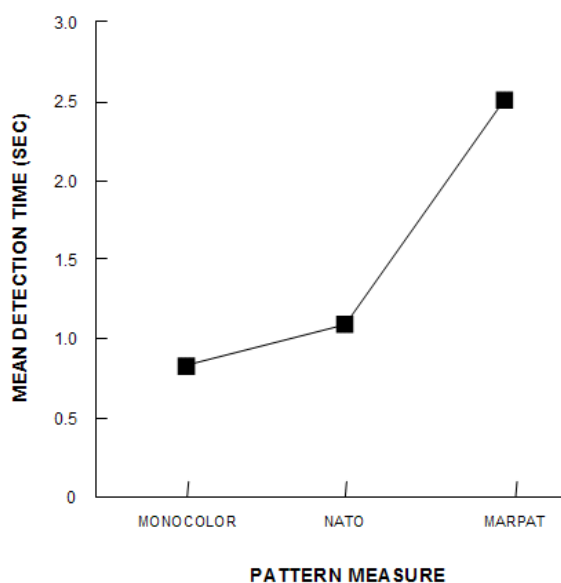
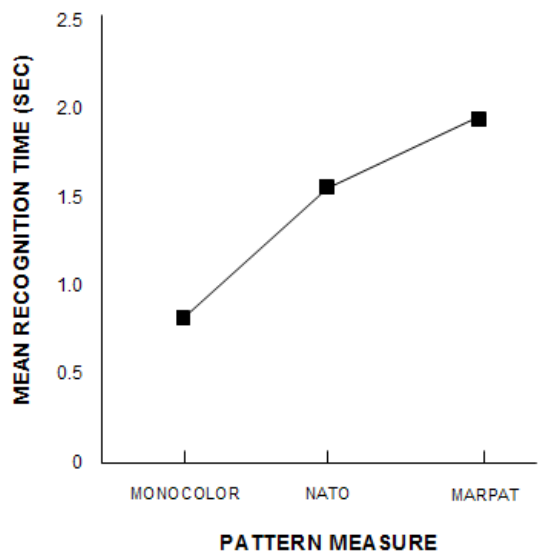
			
MultiCam® *	Spec4 Woodland	Woodland MARPAT*	Iraq

Note that Spec4ce has a different overall look compared to Woodland MARPAT on the previous page as the key recommendation for a better Macropattern disruption of the soldier (the large sections between colors to better conceal a soldier at distance) was not implemented fully within the MARPAT pattern.

The first image below is what was recommended by the world expert on camouflage. Below that image is our SpecAm camouflage, our Spec4ce pattern is a pixelated (digital) version of SpecAm.



Why switch SpecAm to digital Spec4ce? Because testing showed digital conceals better at tactical distances than analog (non-digital).





In 2014 the U.S. Army changed to Scorpion W2 which was designed in 2002 by Crye Precision, the same company that designed Multicam in 2004. Multicam was used in Afghanistan from 2010-2014 with some Army soldiers still wearing the Multicam uniform in Afghanistan as they transition over to Scorpion W2. While the two patterns look similar, in this comparison photo below is a U.S. Army issued Multicam Jacket laying on top of Scorpion W2 fabric, Scorpion W2 is much darker with Dark Brown and Green and Olive colors dominating the pattern in larger parts than Multicam.

Does this make a big change in effectiveness? According to the Natick Study results shown below it does. Multicam tested as their top pattern with an overall rating of 80 out of 100 while Woodland Scorpion came in at 60.8 out of 100. Interesting that the BDU (woodland) the U.S. provides



Afghanistan Special Forces came in at 34.1 out of 100 while the UCP (Universal Camouflage Pattern) tested even worse at 27.8 out of 100. The DCU (Desert Combat Uniform) or 3 color desert pattern tested extremely poor in backgrounds 1,2,3 but tested 80 out of 100 in Desert Terrain.

Uniform / PPE Combination	Blended Better %				Overall*
	BG 1	BG 2	BG 3	BG 4	
MultiCam® / Match	93.1	96.0	72.5	58.3	80.0
Universal AOR / Match	71.3	96.0	41.5	67.2	69.0
AOR-2 / Match	77.4	80.0	85.1	29.3	67.9
Woodland Scorpion / Match	52.9	72.1	66.7	51.5	60.8
BDU / Match	60.8	14.7	59.8	1.3	34.1
UCP / UCP	20.6	23.7	34.6	32.3	27.8
DCU / Match	5.3	10.3	8.1	80.4	26.0
* Sorted On Overall	Top 10		Bottom 10		

Woodland MARPAT placed second in BG1 (High Desert) and third in BG3 (Cropland/Woodland) but the Woodland MARPAT pattern was not included in the table within the paper. AOR-2 is the U.S. Navy Woodland pattern used by Navy SEAL teams.

Going back to the poll in the same paper. The Soldiers were asked where the missions were located: *The most common mission sets in the east included one or more of the following: mountains (62%), villages (42%), rocky deserts (17%) and croplands (14%). The most common mission sets in the south included one or more of the following: villages (60%), sandy deserts (36%), rocky deserts (29%) and croplands (28%).*

*Overall, the importance of camouflage was rated lowest in villages, urban centers and oasis / palm groves and above "Moderately Important" in croplands, woodlands, mountains, rocky deserts and sandy deserts.*

Other than sandy deserts, the other four "Moderately Important" areas of concealment in Afghanistan are cropland, woodlands, mountains and rocky deserts which all favor patterns with green in them (Backgrounds 1,2,3).



Many militaries and Police choose darker colors to portray a more authoritative figure. Research on the psychology of color consistently demonstrates that colors evoke emotional, behavioural and physical responses. (14)

Many people forget that there are two purposes to camouflage; A) To hide from the enemy. B) To identify the soldier to that country. In Afghanistan, the ANA (well respected by the general population) is distinguishable from the foreign coalition troops. While the argument is made by SIGAR that lives may have been lost because of an ineffective camouflage, the counterpoint can be made that ANA troops were spared attack by the enemy as they were identified as Afghanistan citizens and not as foreigners.

I don't know the reasons for selecting this color scheme for Afghanistan but there are many issues that may have ultimately led to this decision which do not seem stupid once you look at other evidence. Ask any soldier in the U.S. Army who wore the UCP (Universal Camouflage Pattern) in Afghanistan from 2004-2010 if they would have preferred Spec4ce Afghanistan Forest over UCP and I suspect more than 50% would say yes.

U.S. Army UCP (Universal Camouflage Pattern) below issued in 2004, used in Afghanistan until 2010.



(15)

## References

- 1) <http://www.smh.com.au/breaking-news-national/new-defence-uniforms-on-the-way-20110530-1fcay.html>
- 2) [http://books.google.ca/books?id=pq1EhoWIAzkC&lpg=PA445&ots=RnFqq3\\_usm&dq=Infrared%20spectral%20reflectance%20camouflage&pg=PA445#v=onepage&q=Infrared%20spectral%20reflectance%20camouflage&f=false](http://books.google.ca/books?id=pq1EhoWIAzkC&lpg=PA445&ots=RnFqq3_usm&dq=Infrared%20spectral%20reflectance%20camouflage&pg=PA445#v=onepage&q=Infrared%20spectral%20reflectance%20camouflage&f=false)
- 3) <https://www.theglobeandmail.com/news/national/canadians-troops-in-kabul-opt-for-green-uniforms/article25686159/>
- 4) <http://www.ag-afghanistan.de/files/vegetationmap.jpg>
- 5) [http://www.globalsecurity.org/jhtml/iframe.html#http://www.globalsecurity.org/military/world/afghanistan/images/economic\\_activity.jpg](http://www.globalsecurity.org/jhtml/iframe.html#http://www.globalsecurity.org/military/world/afghanistan/images/economic_activity.jpg)
- 6) [http://www.lib.utexas.edu/maps/middle\\_east\\_and\\_asia/afghanistan\\_pop72.jpg](http://www.lib.utexas.edu/maps/middle_east_and_asia/afghanistan_pop72.jpg)
- 7) [http://dwms.fao.org/~draft/data/img/lc\\_2010\\_map.jpg](http://dwms.fao.org/~draft/data/img/lc_2010_map.jpg)
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CAMOUFLAGE ASSESSMENT**
- 11) <http://soldiersystems.net/2009/09/18/natick-camo-study-making-sense-part-ii/>
- 12) <http://www.hyperstealth.com/specam/science/index.html>
- 13) <http://www.hyperstealth.com/digital-design/index.htm>
- 14) <http://capg.ca/the-psychological-influence-of-the-police-uniform/>
- 15) <http://www4.army.mil/news/article.php?story=6042>