An important part of our research is aimed at exploring the mesophotic zone also known as the “twilight zone”. The term mesophotic refers to the bathymetric zone that extended from 50 to 200 meters depth, characteristic of the lower portion of the photic zone.

In the eastern Mediterranean Sea, water clarity is relatively high and 1% PAR (photosynthetic active radiation) can reach 123m and 0.1% PAR will reach 184 meters. The average is around 85m for 1% PAR and 127m for 0.1% PAR Robartsl et al. 1996.

Life in these intermediate environments requires technical diving and mainly trimix diving capabilities.

What is technical diving?

Technical diving (sometimes referred to as Tec diving) is a form of scuba diving that exceeds the scope of recreational diving. Technical divers require advanced training, extensive experience, specialized equipment and often breathe breathing gases other than air or standard nitrox.

The concept and term, technical diving, are both relatively recent advents, although divers have been engaging in what is now commonly referred to as technical diving for decades. The term technical diving has been credited to Michael Menduno, who was editor of the (now defunct) diving magazine AquaCorps in 1991 (edited from Wikipedia)

The following table tries to describe the differences between technical and recreational diving.

|  |  |  |
| --- | --- | --- |
| **Technical Diving** | | |
| **Activity** | **Recreational** | **Technical** |
| [Deep diving](http://en.wikipedia.org/wiki/Deep_diving) | Maximum depth of 40 metres (130 ft) | Beyond 40 metres (130 ft) |
| [Decompression diving](http://en.wikipedia.org/wiki/Decompression_stop) | No decompression | Decompression diving |
| [Mixed gas diving](http://en.wikipedia.org/wiki/Gas_blending) | Air and [Nitrox](http://en.wikipedia.org/wiki/Nitrox" \o "Nitrox) | [Trimix](http://en.wikipedia.org/wiki/Trimix_(breathing_gas)), [Heliox](http://en.wikipedia.org/wiki/Heliox" \o "Heliox), [Heliair](http://en.wikipedia.org/wiki/Heliair" \o "Heliair) and [Hydrox](http://en.wikipedia.org/wiki/Hydrox_(breathing_gas)" \o "Hydrox (breathing gas)) |
| Gas switching | Single gas used | May switch between gases to accelerate decompression and/or "travel mixes" to permit descent carrying [hypoxic](http://en.wikipedia.org/wiki/Hypoxia_(medical)) gas mixes |
| [Wreck diving](http://en.wikipedia.org/wiki/Wreck_diving) | Penetration limited to "light zone" or 30 metres (100 ft) depth/penetration | Deeper penetration |
| [Cave diving](http://en.wikipedia.org/wiki/Cave_diving) | Penetration limited to "light zone" or 30 metres (100 ft) depth/penetration | Deeper penetration |
| [Ice diving](http://en.wikipedia.org/wiki/Ice_diving) | Some agencies regard ice diving as recreational diving; others as technical diving. | |
| [Rebreathers](http://en.wikipedia.org/wiki/Rebreather) | Some agencies regard use of semi-closed rebreathers as recreational diving; others as technical diving. | |
| [Solo diving](http://en.wikipedia.org/wiki/Solo_diving) | Recreational diving requires buddy system | Solo diving |