

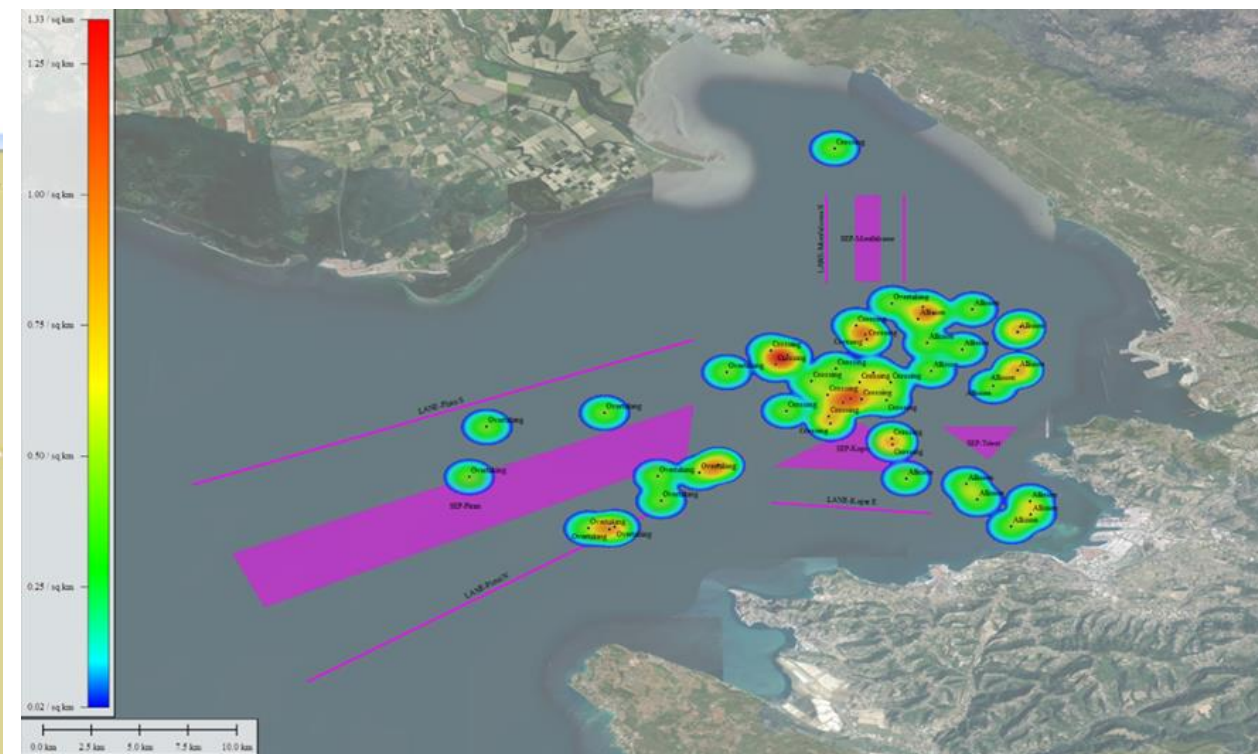
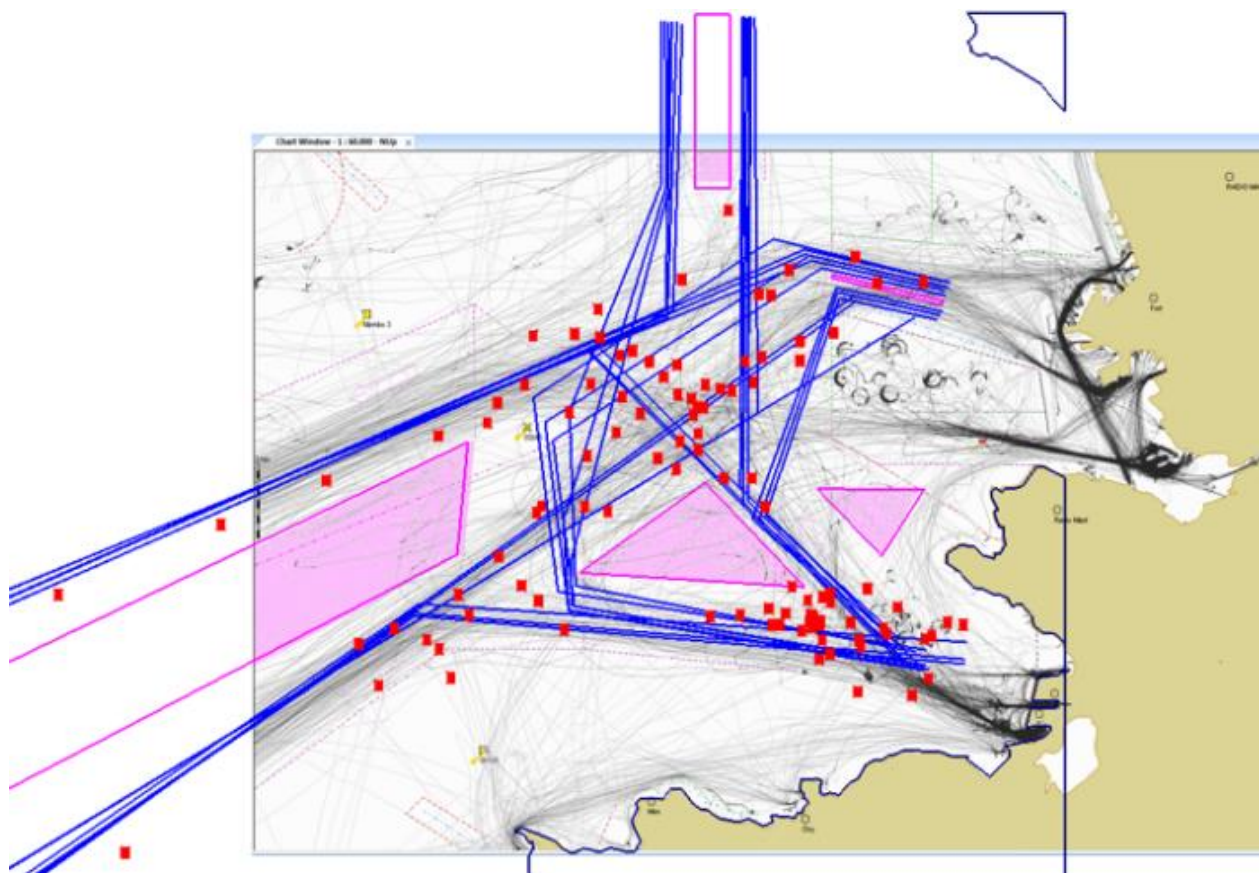
SENSITIVE MAPPING FOR PRESERVE THE BIODIVERSITY IN CASE OF OIL SPILL POLLUTION IN NORTHERN ADRIATIC.

Capt. VALTER SUBAN, MSc
UL FPP

IZOLA 21. 09.2023



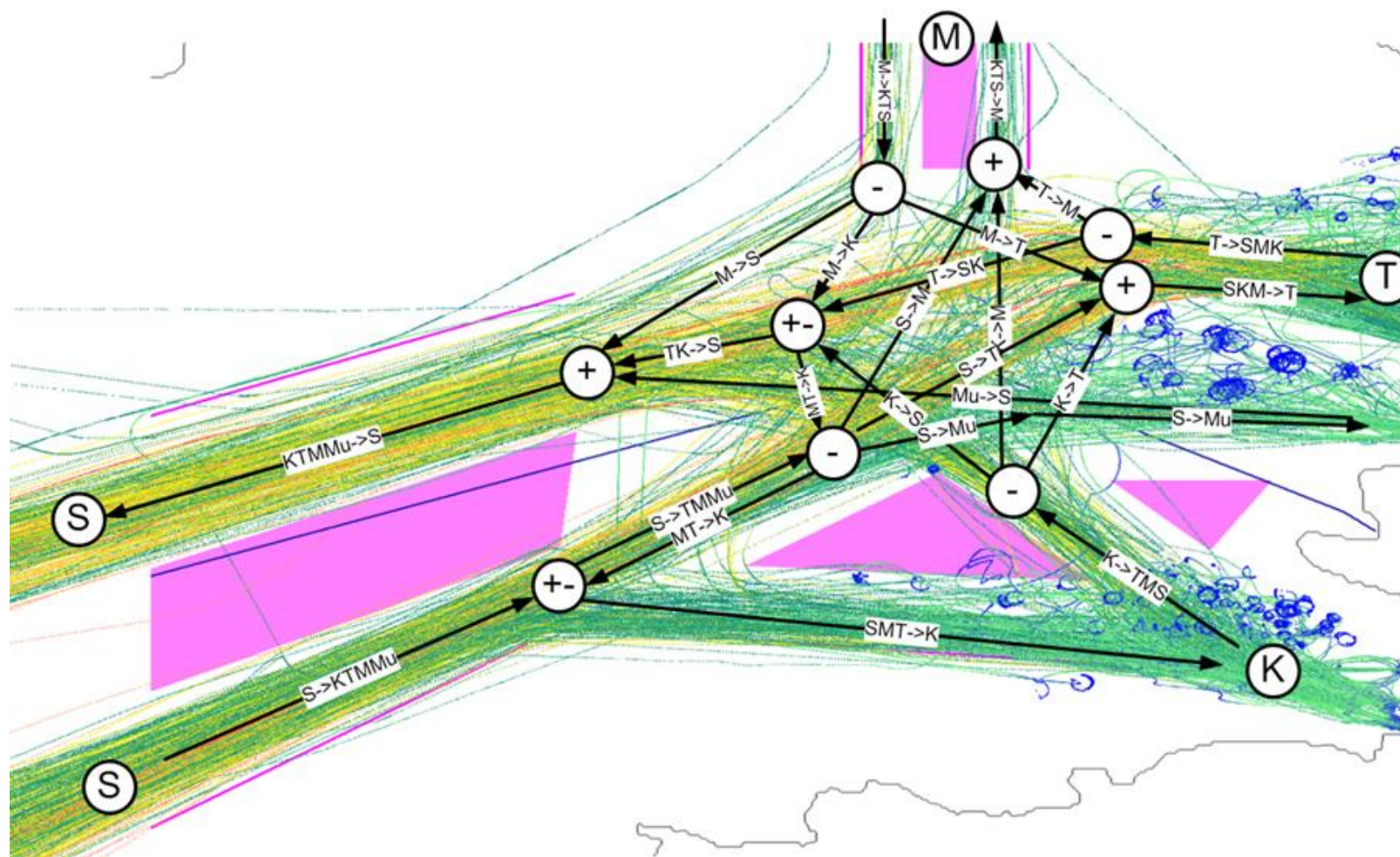
Stochastic Risk Assessment



The model showed that the highest density of collisions in the area is located between the separation lines - the so-called 'precautionary zone'



Quantitative assessment IWRAP - (IALA) Waterway Risk Assessment Program



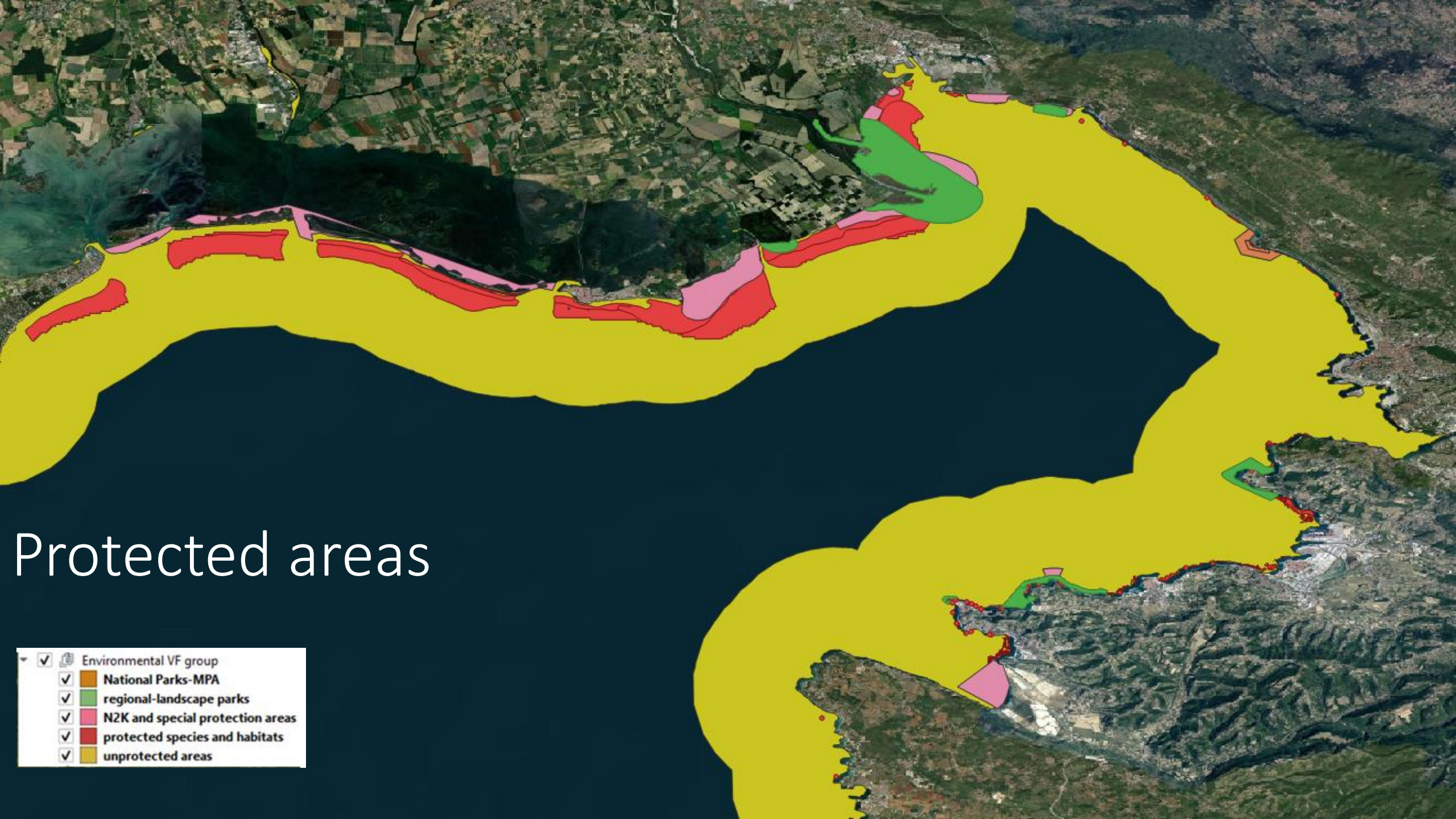
Based on the 2019 traffic analysis, one collision occurs every **273 years**. However, the probability of a collision in 2020 decreases to every **365 years**.

The expected powered **grounding event** is expected to occur every 1657 years and drifting grounding every 13.62 years.

Powered **allision situation** at anchorage area is expected every 146 years and drifting allision event every 125.1 years.

Position and type of accidents

| LONGITUDE | LATITUDE | Type of accident | Bunker Oil (HFO_ & LSFO) | Crude Oil | Product (diesel) |
|----------------|----------------|------------------|--------------------------|-----------|------------------|
| 14.48815016° E | 43.64815717° N | Crossing | 1500 | 15000 | 15000 |
| 14.11154590° E | 43.68319013° N | Crossing | 1500 | 15000 | 15000 |
| 13.54751533° E | 43.69720331° N | Allision | 1000 | | 5000 |
| 13.66837902° E | 43.73573956° N | Crossing | 1500 | | 15000 |
| 13.69465374° E | 43.94243399° N | Crossing | 1500 | | 15000 |
| 14.25868431° E | 43.97571530° N | Overtaking | 500 | 5000 | 5000 |
| 13.74720317° E | 44.00199001° N | Crossing | 1500 | | 15000 |
| 13.78048448° E | 44.06154604° N | Allision | 1000 | | 5000 |
| 13.04128914° E | 44.10533723° N | Allision | 1000 | 10000 | 5000 |
| 13.20944732° E | 44.18591302° N | Crossing | 1000 | | 5000 |
| 13.06931550° E | 44.22269763° N | Allision | 1500 | | 15000 |
| 14.02921846° E | 44.22620092° N | Overtaking | 500 | 5000 | 5000 |
| 13.14288471° E | 44.31553496° N | Crossing | 1000 | | 5000 |
| 13.70800006° E | 44.35607121° N | Overtaking | 500 | | |



Protected areas

- Environmental VF group
- National Parks-MPA
- regional-landscape parks
- N2K and special protection areas
- protected species and habitats
- unprotected areas



Geomorphological VF group

- coast cleaning difficulty
- 1
- 3
- 5
- 6
- 8
- 9



▼  Socio-economic VF group

▼  **socioeconomic VFs**

Band 1: Height

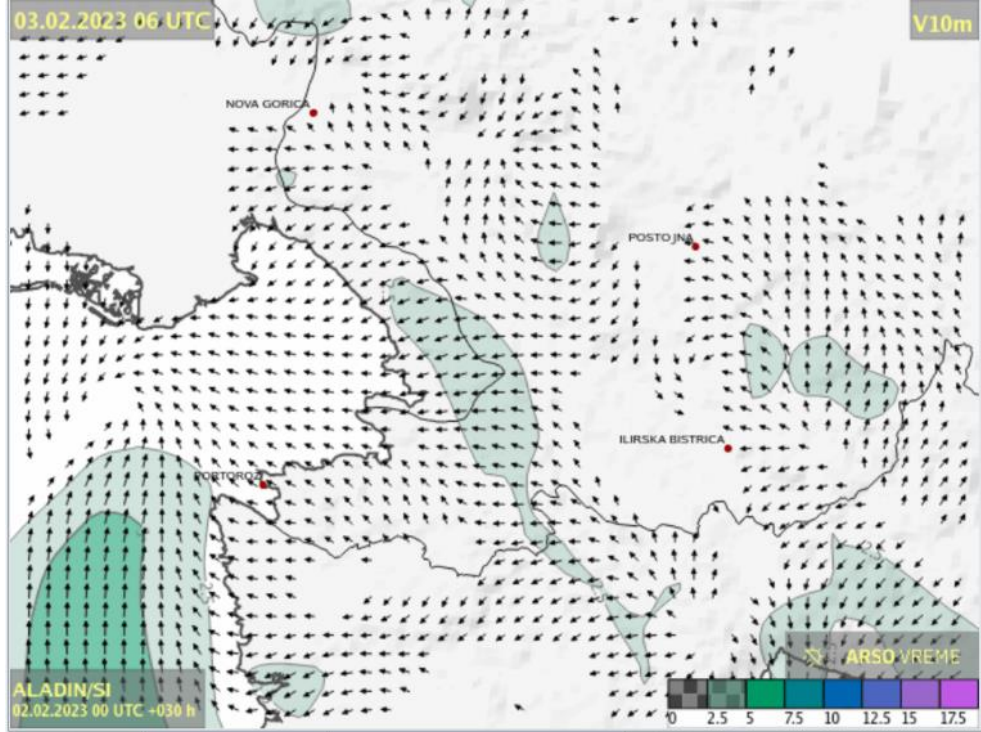
| | |
|---|-----|
|  | 1-2 |
|  | 3-5 |
|  | 6-7 |
|  | 8-9 |



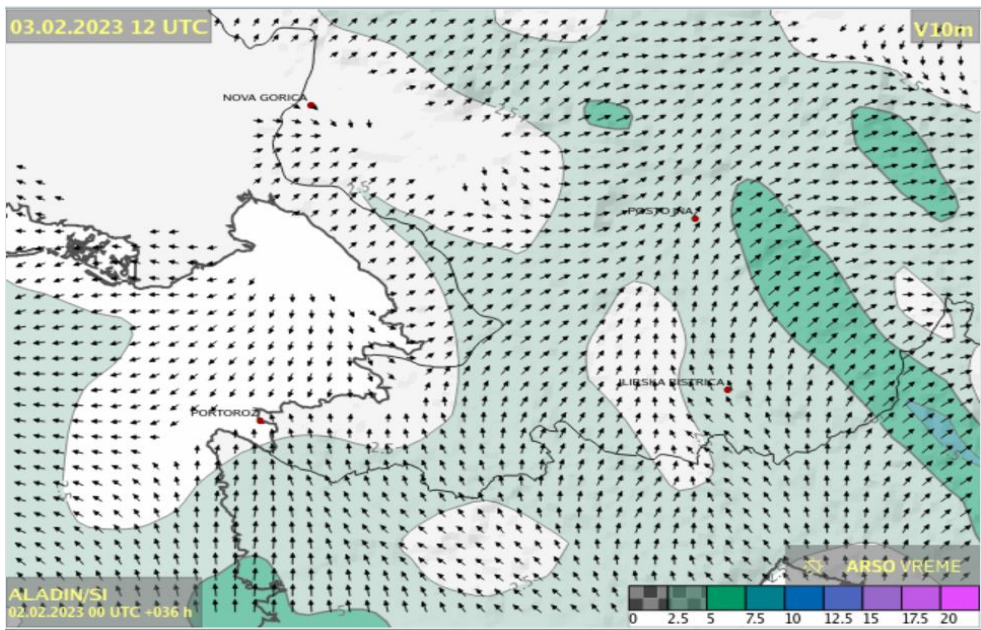
Gulf of Trieste

Socio-economic factors





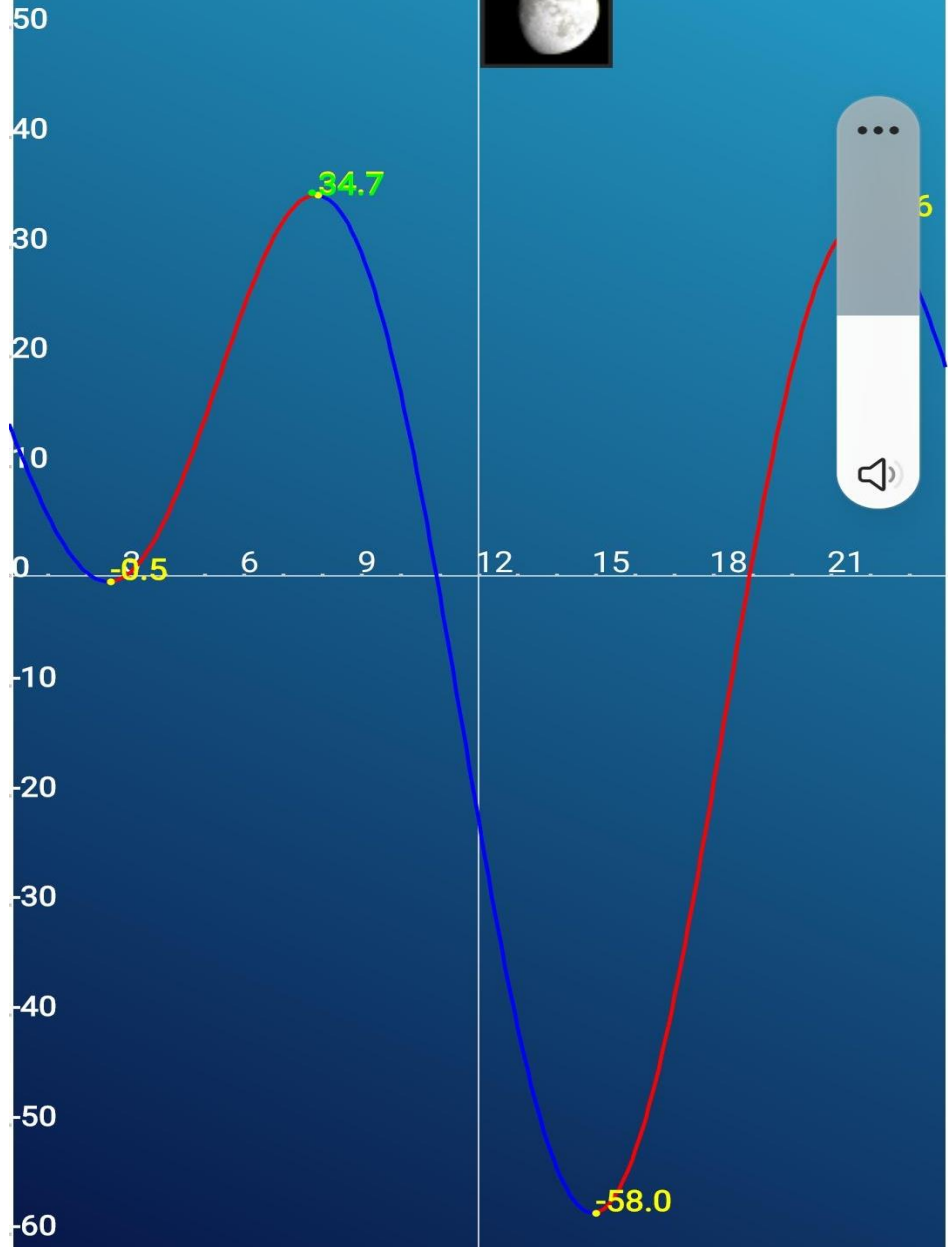
2023-02-03 ob 7:00 CET



2023-02-03 ob 13:00 CET

02:32, višina: -51 cm
07:50, višina: 34.74 cm
14:55, višina: -58.04 cm
21:50, višina: 32.61 cm

Tren. višina: 34.7 cm
Datum 3.2.2023
Dan: Friday
Sončni vzhod: 07:25
Sončni zahod: 17:15



Value of this part of the coast?

- Environment
- Society
- Economy





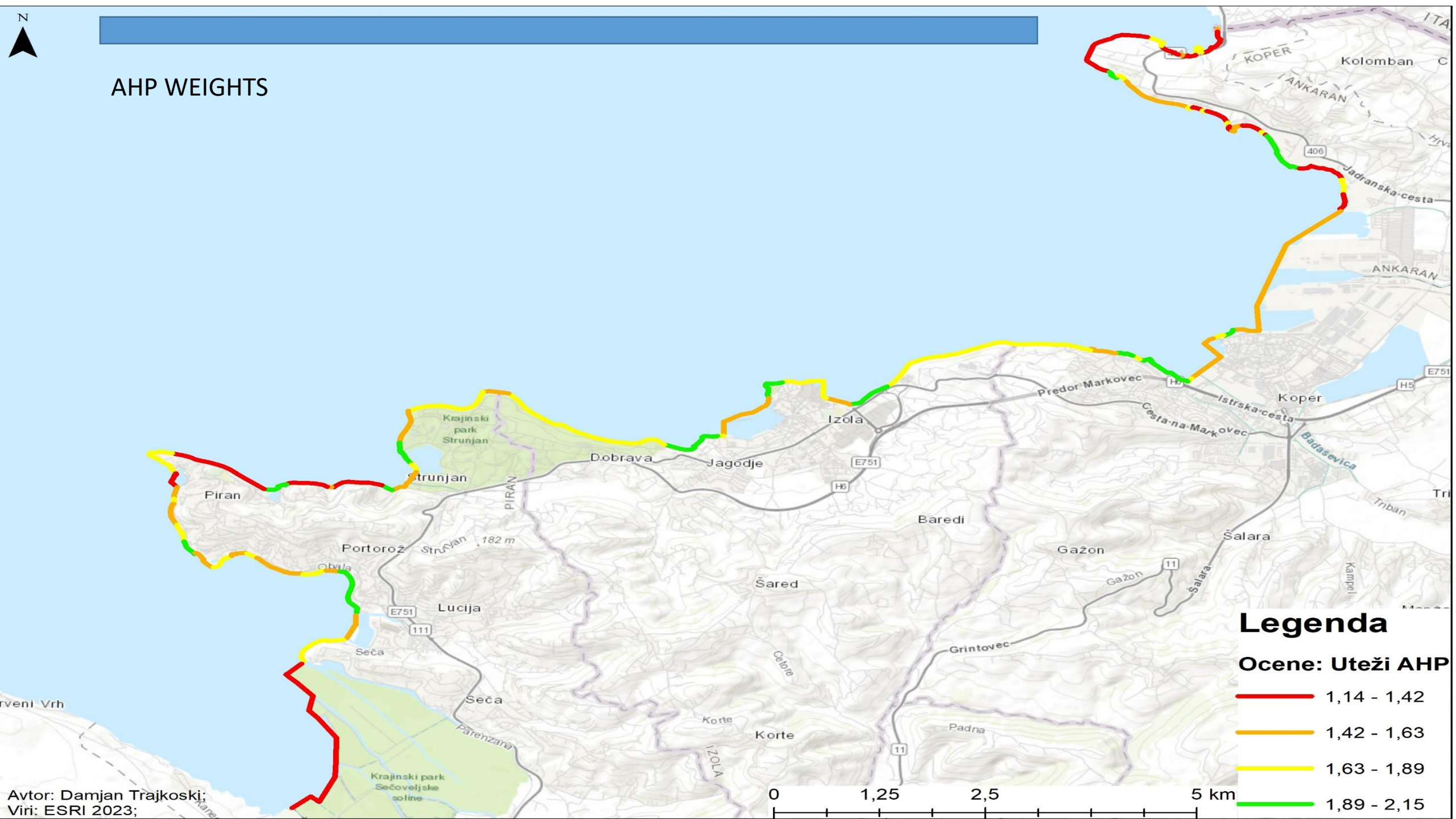
KRITERIJI

INDIVIDUAL APPROACH





| KRITERIJI | | | | | OCENA - Ocena socialni vidik | OCENA - Ocena okoljevarstveni vidik | OCENA - Ocena ekonomski vidik | | | | |
|---------------|---------------------------|---------------------------|-------------------------|--------------------|------------------------------|-------------------------------------|-------------------------------|-------|----------|----------|----------|
| | | | | | | | | | | | |
| Zaporedna št. | Začetna koordinata | Končna koordinata | Opis odseka | Dolžina odseka (m) | | | | | | | |
| 57 | 45°32'24.6"N 13°31'45.1"E | 45°32'13.5"N 13°31'45.1"E | Mesečev zaliv | 1060.7 | 2 | 9 | 1 | 4.000 | 2121.400 | 9546.300 | 1060.700 |
| 58 | 45°32'13.5"N 13°31'45.1"E | 45°31'56.6"N 13°31'45.1"E | Plaža Strunjan-FKK | 537.1 | 3 | 7 | 1 | 3.667 | 1611.300 | 3759.700 | 537.100 |
| 59 | 45°31'56.6"N 13°31'45.1"E | 45°31'45.1"N 13°31'45.1"E | Plaža Strunjan | 409.2 | 6 | 2 | 6 | 4.667 | 2455.200 | 818.400 | 2455.200 |
| 60 | 45°31'45.1"N 13°31'45.1"E | 45°31'41.2"N 13°31'45.1"E | Pasja plaža v Strunjanu | 151.4 | 4 | 3 | 1 | 2.667 | 605.600 | 454.200 | 151.400 |
| 61 | 45°31'40.4"N 13°31'45.1"E | 45°31'33.3"N 13°31'45.1"E | Krajinski park Strunjan | 237.4 | 5 | 7 | 4 | 5.333 | 1187.000 | 1661.800 | 949.600 |
| 62 | 45°31'33.3"N 13°31'45.1"E | 45°31'31.2"N 13°31'45.1"E | Plaža | 152 | 3 | 4 | 1 | 2.667 | 456.000 | 608.000 | 152.000 |
| 63 | 45°31'31.2"N 13°31'45.1"E | 45°31'33.5"N 13°31'45.1"E | Plaža Sv. Duh | 168.5 | 5 | 3 | 6 | 4.667 | 842.500 | 505.500 | 1011.000 |
| 64 | 45°31'33.5"N 13°31'45.1"E | 45°31'32.0"N 13°31'45.1"E | / | 603 | 1 | 9 | 1 | 3.667 | 603.000 | 5427.000 | 603.000 |
| 65 | 45°31'32.0"N 13°31'45.1"E | 45°31'32.1"N 13°31'45.1"E | Plaža Pacug | 69 | 5 | 3 | 5 | 4.333 | 345.000 | 207.000 | 345.000 |
| 66 | 45°31'32.1"N 13°31'45.1"E | 45°31'33.6"N 13°31'45.1"E | / | 535.3 | 2 | 9 | 1 | 4.000 | 1070.600 | 4817.700 | 535.300 |
| 67 | 45°31'33.6"N 13°31'45.1"E | 45°31'31.1"N 13°31'45.1"E | Plaža Fiesa | 278.2 | 6 | 3 | 5 | 4.667 | 1669.200 | 834.600 | 1391.000 |
| 68 | 45°31'31.1"N 13°31'45.1"E | 45°31'45.3"N 13°31'45.1"E | Pešpot Fiesa-Piran | 922.2 | 7 | 7 | 1 | 5.000 | 6455.400 | 6455.400 | 922.200 |
| 69 | 45°31'45.3"N 13°31'45.1"E | 45°31'49.1"N 13°31'45.1"E | Plaža pod Obdzidjem | 321.8 | 4 | 7 | 1 | 4.000 | 1287.200 | 2252.600 | 321.800 |



AHP WEIGHTS



Legenda

| Ocene: Uteži AHP | Weight Range |
|---|--------------|
|  | 1,14 - 1,42 |
|  | 1,42 - 1,63 |
|  | 1,63 - 1,89 |
|  | 1,89 - 2,15 |

