

UNMANNED UNDERWATER VEHICLES: ENABLERS OR DISRUPTORS OF THE PEACEFUL USES OF THE SEA?

Ocean and Peace Conference

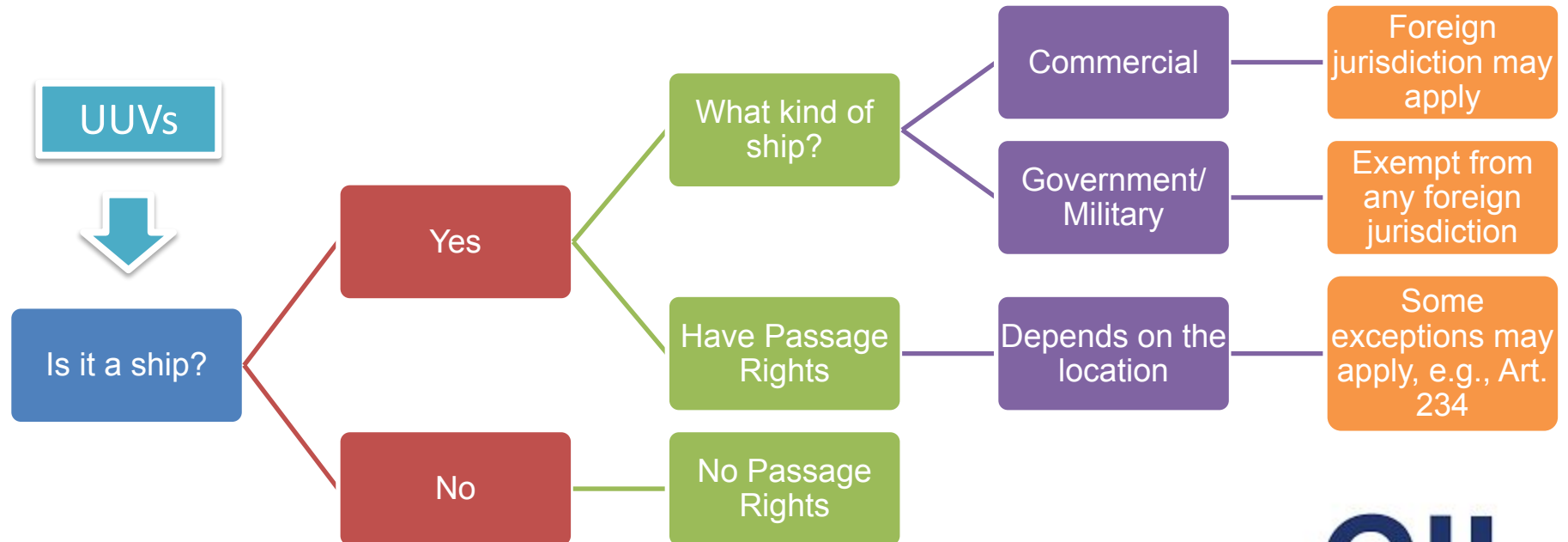
9 December 2025, Shangri-La Hotel, Jakarta, Indonesia

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Centre for International Law (CIL), National University of Singapore (NUS)

Legal Definition

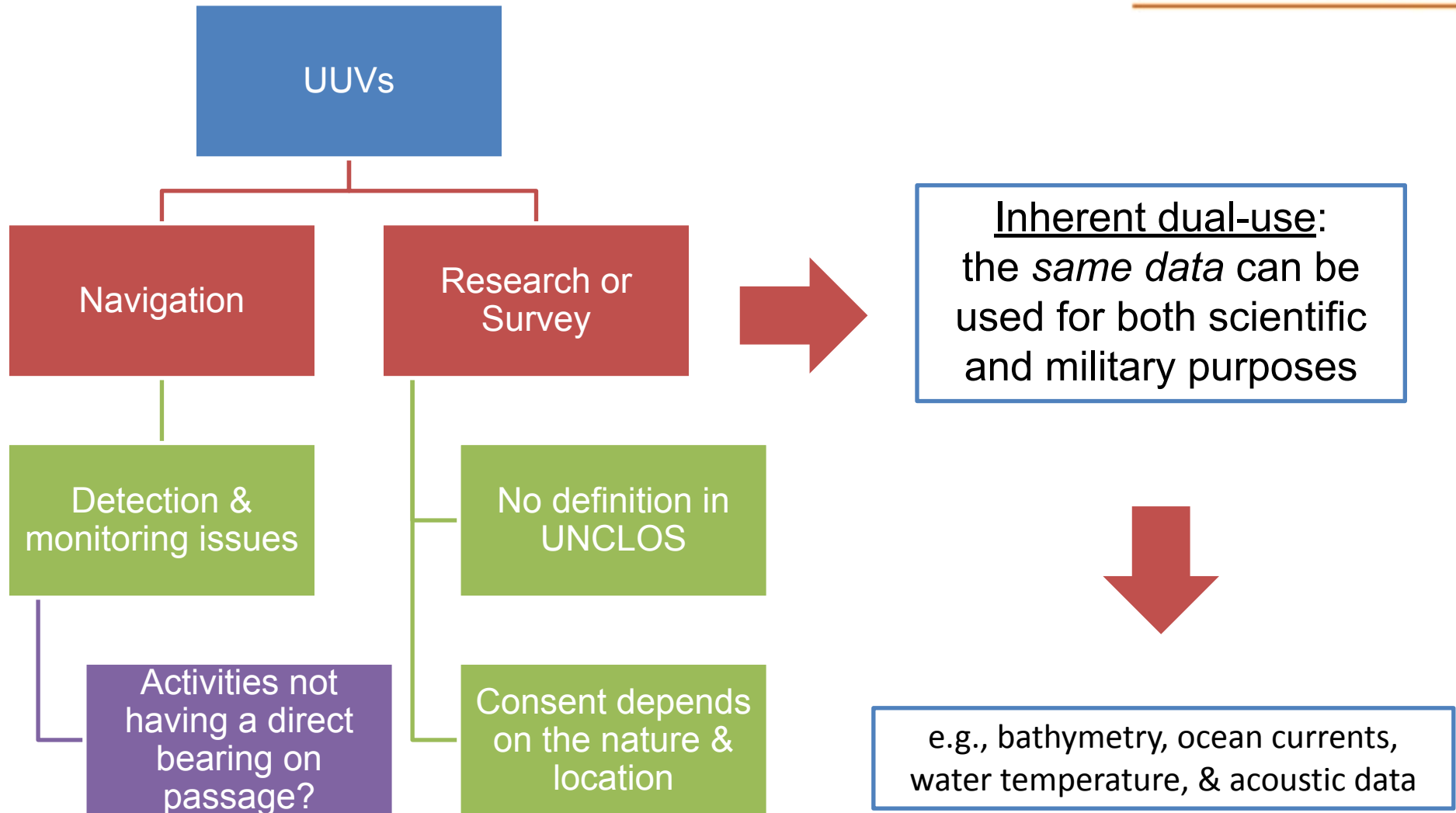
UNCLOS provides no definition of 'ship,' defining only 'warships' (Art. 29) and using terms like 'vessel' and 'underwater vehicles' without clarifying their meaning or relationship.



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The Problem



UUVs found in Indonesian waters

Indonesian fisher finds drone submarine on possible covert mission

Navy seizes UUV, likely a Chinese Sea Wing, that experts say could be used to plot routes for military subs

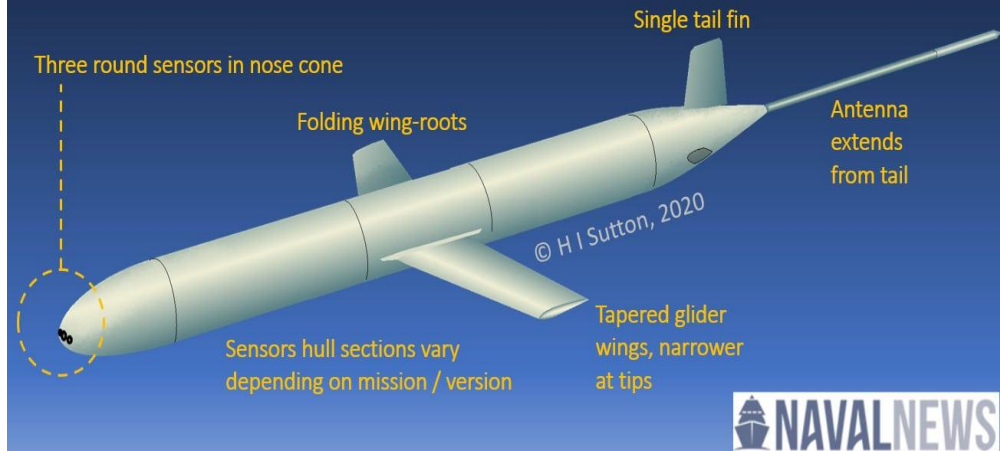


📷 Suspected Chinese Seawing drone recovered by a fisher and the Indonesian navy. Photograph: @Jatosint/Twitter

An Indonesian fisher has found what experts say is likely to be a Chinese submarine drone in waters on a strategic maritime route from the South China Sea to Australia.



Chinese 'Sea Wing' submarine drones found in Indonesia. March 2019 and December 2020

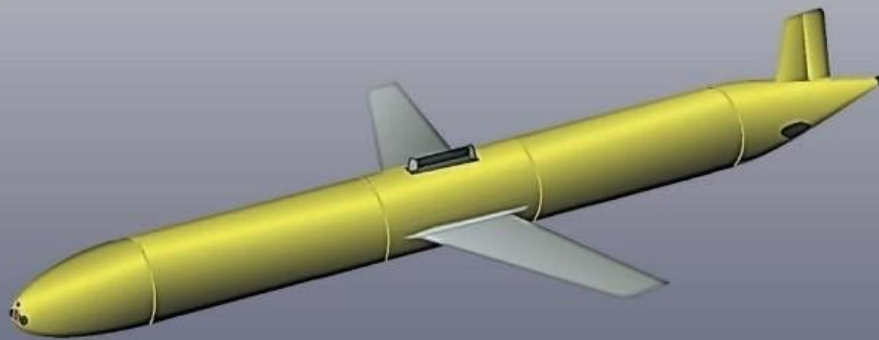


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Other Reported Incidents in Asia

Chinese 'Sea Wing' (Haiyi) underwater gliders found in Asia



Reported Incidents of Sea Wing gliders found:

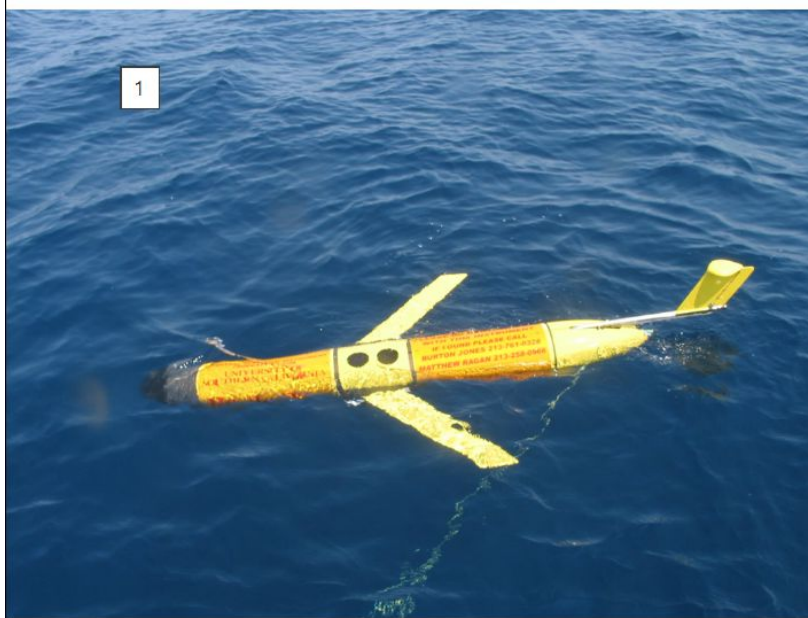
- A** 16 November 2016. Quang Ngai, Vietnam
- B** 12 February 2019. Bangka, Indonesia
- C** 23 March 2019. Riau Islands, Indonesia
- D** 22 January 2020. Masalembu, Indonesia
- E** 20 December 2020. Selayar Islands, Indonesia

1. Malacca Strait, 2. Sunda Strait, 3. Lombok Strait

Red lines are ship tracks of selected Chinese survey ships, 2019–20. Data provided by MarineTraffic.com



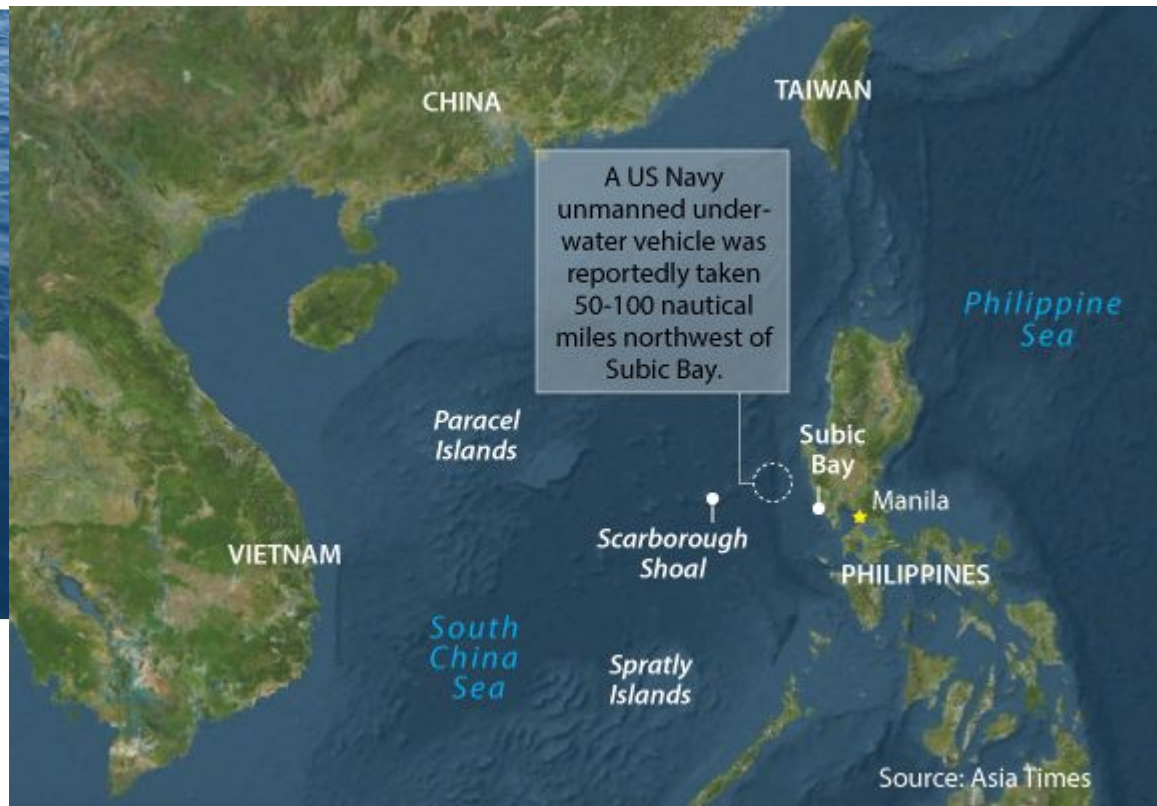
UUVs for Military Surveys



A US Navy buoyancy glider similar to one seized by Chinese forces. Picture credit: US Navy Photo

SG ECONOMY 4 min. Read

China seizes US glider in latest attempt to stamp sovereignty over South China Sea



"It was taken" by China, Capt Davis said during a press briefing on Friday.

"The UUV [unmanned underwater vehicle] was lawfully conducting a military survey in the waters of the South China Sea," he added.

"It's a sovereign immune vessel, clearly marked in English not to be removed from the water - that it was US property."

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Uncrewed Submarines



China Testing 'XXL' Uncrewed Submarines in South China Sea

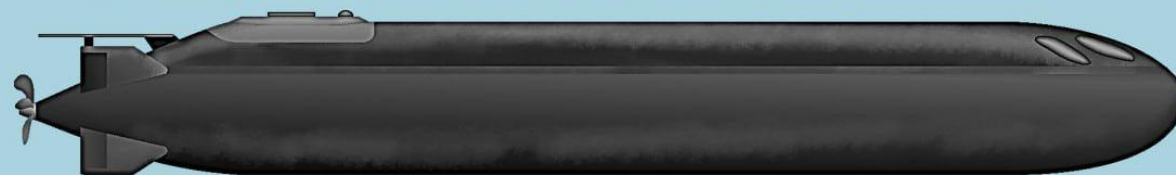
China has deployed two extra-large uncrewed submarines to Haian in the South China Sea, where they appear to be undergoing trials. The two designs may represent competing prototypes. Both are kept inside specialized floating docks that conceal them from passing ships and local observers.



U.S. Navy 'Orca' **XLUV**
15.5 meters (51 ft) long, extendable to 26 meters (85 ft)



Chinese **XXLUV**
~42 meters (138 ft) long
A second Chinese design is similar in overall size and arrangement.



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UUVs for Criminal Activities

BBC

Drug smuggling: Underwater drones seized by Spanish police

5 July 2022

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Leo Sands

BBC News



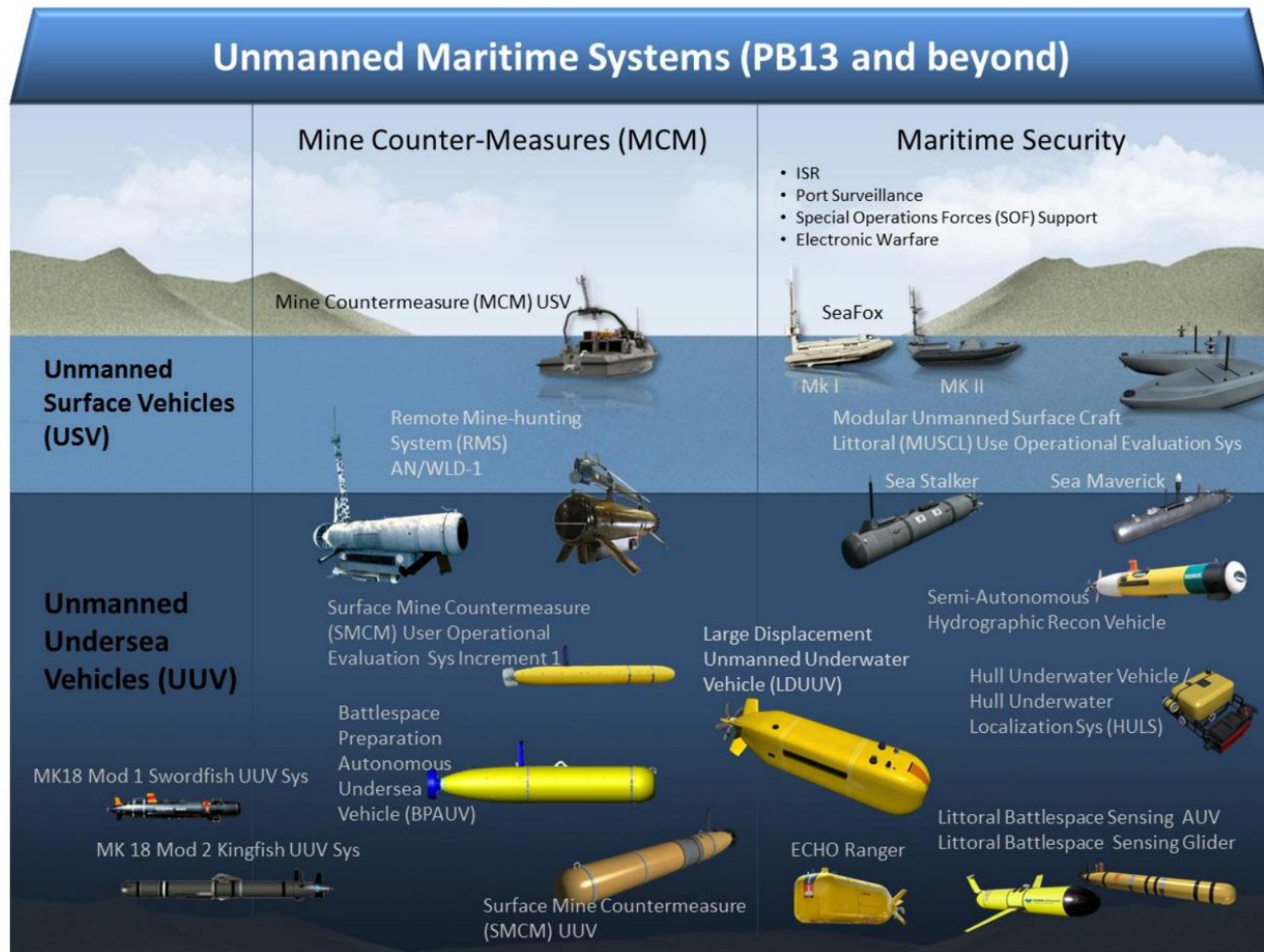
Spanish police released this video of drones

Spanish police have seized three underwater drones built to smuggle drugs across the sea from Morocco.

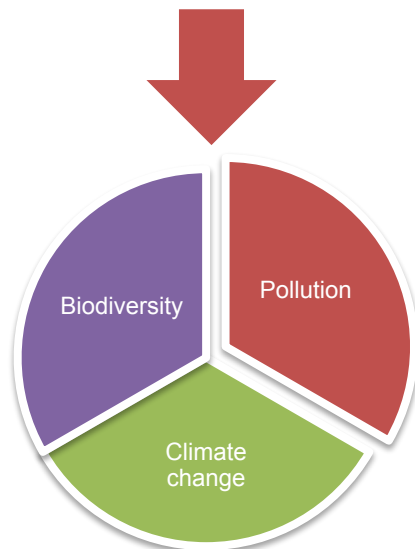
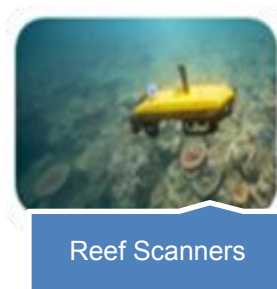
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UUVs for Maritime Law Enforcement



UUVs for Scientific Data Collection



- Phytoplankton biomass & diversity
- Zooplankton biomass & diversity
- Fish abundance & distribution
- Sea turtle abundance & distribution
- Marine mammal abundance & distribution
- Sea bird abundance & distribution
- Coral cover & composition
- Seagrass cover & composition
- Mangrove cover & composition
- Macroalgal Canopy



Woods Hole
Oceanographic Institution,
USA: Slocum Gliders
carrying a wide variety of
sensors, they can be
programmed to **patrol for
weeks** at a time, surfacing
to transmit their data to
shore while downloading
new instructions at
regular intervals.



National Oceanography
Centre, UK, 2022: Over a
period of five weeks the
Autosub Long Range 1500
travelled from Plymouth out
to the continental shelf edge
south of Ireland and back to
Plymouth, covering a distance
of almost **2,000km** while
venturing to depths of over
1,000m.



Harbin Engineering
University China 2021: The
autonomous underwater
vehicle *Wukong* has broken
records by reaching the
incredible depth of **10,896
meters** in the Mariana
Trench.

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Enablers or Disruptors?

