|  |
| --- |
| IALA Guideline |

1234 [Guideline No.]

ATON MANAGEMENT IN PROTECTED AREAS

Edition x.x

Document date

Revisions to this IALA document are to be noted in the table prior to the issue of a revised document.

|  |  |  |
| --- | --- | --- |
| Date | Page / Section Revised | Requirement for Revision |
| April 21, 2016 | First draft | Yes |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

1. ACRONYMS 4

2. AIMS AND OBJECTIVES 5

3. INTRODUCTION 5

4. Protected Areas and Marine Protected Areas 5

4.1. Protected Areas 5

4.2. Marine Protected Areas 7

4.3. Organizations in charge of PA and MPA 8

5. Way Forward 8

5.1. Basic principles of AtoN management in PA and MPA 8

5.2. Management of AtoN in PA and MPA 9

5.2.1. Setting up a new AtoN 9

5.2.2. Existing AtoN 9

5.2.3. Removal of an AtoN 9

6. FIGURES 9

7. REFERENCES 11

List of Tables

Table 1 Example of a table with the significant information in the first column 6

Table 2 Example of a table with the significant information in the first row 6

Table 3 Example of a table with coloured rows 6

Table 4 Example table 9

List of Figures

Figure 1 Example figure 7

Figure 2 Another example figure 7

List of Equations

Equation 1 Geographical range 5

Equation 2 Theory of Special Relativity 5

# ACRONYMS

To assist in the use of this Guideline, the following acronyms have been used:

|  |  |
| --- | --- |
| AtoN | Aids to Navigation |
| IALA | International Association of Marine Aids to Navigation and Lighthouse Authorities |
| IMO | International Maritime Organization |
| IUCN | International Union for Conservation of Nature |
| MPA | Marine Protected Area |
| PA | Protected Area |
| PSSA | Particularly Sensitive Sea Areas |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| WWF | World Wide Fund for Nature |
|  |  |
|  |  |
|  |  |

# AIMS AND OBJECTIVES

Over the past years, Protected Areas (PA) and Marine Protected Areas (MPA) have increased and are gaining more importance. Large global environmental organisations representing several countries, such as International Union for Conservation of Nature (IUCN), also play an active role in environmental governance and biodiversity conservation. It is why IALA deemed important to create a guideline supporting national authorities with Aids to Navigation (AtoN) management in PAs and MPAs to better contribute to conservation and protection of environmentally sensitive areas.

This guideline may be used as a tool for Competent Authorities in identifying steps to follow when comes the time to consider installation of an AtoN in a PA or an MPA or for review, on-going maintenance and removal. Examples of best practices and useful links to key sites are also provided in section 4.

# INTRODUCTION

To prevent the degradation of the environment due to human activity, directly or indirectly, by substances, waste or various nuisances such as sound, light, chemicals, thermal and biological hazards, most developed countries already have in place laws or other means to protect the environment including PAs and MPAs.

To ensure that the right procedure is followed when creating, reviewing, modifying or removing an AtoN, Competent Authority should consult with departments responsible for laws/rules/policies on PAs and MPAs as part of their decision making process before taking any action.

For example, a floating aid could have a degrading effect on the environment if its chain is scraping the bottom of a fragile ecosystem; fog horns or lights on fixed aids could be a nuisance for protected birds or other protected species; and, access to an AtoN for maintenance might be a nuisance if the timing and proximity interfere with the nesting period or spawning season of protected species.

This type of consideration has to be taken into account in the management of new and existing AtoN. Consulting with responsible authorities on PAs and MPAs will allow the identification of potential issues and possible mitigation measures.

# protected areas and marine protected areas

IALA has chosen to comply with the definitions of PA and MPA as stated by the IUCN. They read as follow:

**Protected Area (PA):** Clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.

**Marine Protected Area (MPA):** Any area of the intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment.

## protected areas

UICN classifies protected areas according to their management objectives. The categories are recognised by international bodies such as the United Nations and by many national governments as being the global standard for defining and recording protected areas and as such are increasingly being incorporated into government legislation.

***Table 1 IUCN Protected Area Management Categories***

|  |  |  |
| --- | --- | --- |
| **IUCN Category** | **Characteristics and Management Objectives** | **Example of Protected Area** |
| Ia | **Strict Nature Reserve:** Strictly set aside area to protect biodiversity and also possibly geological/geomorphological features.  Main Objective: To conserve regionally, nationally or globally outstanding ecosystems, species (occurrences or aggregations) and/or geodiversity features. | Swiss National Park or Ecological Reserves in Quebec. |
| Ib | **Wilderness Area:** Usually large unmodified or slightly modified areas, retaining their natural character and influence without permanent or significant human habitation.  Main Objective: To protect the long-term ecological integrity of natural areas that are undisturbed by significant human activity, free of modern infrastructure and where natural forces and processes predominate. | Yosemite National Park in USA. |
| II | **National Park:** Large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area.  Main Objective: To protect natural biodiversity along with its underlying ecological structure and supporting environmental processes, and to promote education and recreation. | Vanoise National Park in France. |
| III | **Natural Monument or Feature:** Protected areas set aside to protect a specific natural monument.  Main Objective: To protect specific outstanding natural features and their associated biodiversity and habitats. | Los Estoraques Unique Natural Area in Colombia. |
| IV | **Habitat/Species Management:** Area Protected areas aiming to protect particular species or habitats and management reflects this priority.  Main Objective: To maintain, conserve and restore species and habitats. | Natural Reserve of Popenguine in Senegal. |
| V | **Protected Landscape/Seascape:**  Protected area where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value.  Main objective: To protect and sustain important landscapes/seascapes and the associated nature conservation and other values created by interactions with humans through traditional management practices. | Montain Range of Wuyi Shan in China ; Regional Naturals Parks in France. |
| VI | **Protected Area with sustainable use of natural resources:** Protected areas that conserve ecosystems and habitats, together with associated cultural values and traditional natural resource management systems.  Main objective: To protect natural ecosystems and use natural resources sustainably, when conservation and sustainable use can be mutually beneficial. | Alonnisos Marine Park in Greece |

The following table is a sample of type of protected areas. It illustrates the diversity in the classification of protected areas and their associated level of governance.

***Table 2 Type of protected areas and their associated level of governance***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | International | Supranational | National | Regional | Local | Private |
| **National Park** |  |  | X |  |  |  |
| **Natural Park** |  |  | X | X | X |  |
| **Natural Reserve** |  |  | x |  | X | x |
| **Protected Landscape** |  |  | x | X | X |  |
| **Natural Monument** |  |  | x |  |  |  |
| **Closed Area** |  |  | X |  |  |  |
| **Wetland** |  |  | x |  |  |  |
| **Special Protection Area** |  |  | X |  |  |  |
| **Key Biotope** |  |  | x |  |  |  |
| **Site of Community Importance** |  | x |  |  |  |  |
| **Special Area of Conservation** |  | x |  |  |  |  |
| **UNESCO World Heritage Sites** | x |  |  |  |  |  |
| **Biosphere Reserve** |  |  | x |  |  |  |
| **Site of Specific Scientific Interest** |  |  | x |  |  |  |

## marine protected areas

Marine Protected Areas are protected area of seas, ocean or large lake and their adjacent area. Human activity is restricted in MPAs for a conservation purposes, typically to protect natural or cultural resources.

The following table is a sample of marine protected areas in the world. It illustrates the diversity of type of marine protected areas.

***Table 3 Sample of marine protected areas***

|  |  |
| --- | --- |
| **Marine Protected Area** | **Country** |
| The [Bowie Seamount](https://en.wikipedia.org/wiki/Bowie_Seamount) on the [Coast of British Columbia](https://en.wikipedia.org/wiki/British_Columbia_Coast) | [Canada](https://en.wikipedia.org/wiki/Canada) |
| The [Great Barrier Reef](https://en.wikipedia.org/wiki/Great_Barrier_Reef) in Queensland | [Australia](https://en.wikipedia.org/wiki/Queensland,_Australia) |
| The [Ligurian Sea Cetacean Sanctuary](https://en.wikipedia.org/wiki/Ligurian_Sea_Cetacean_Sanctuary" \o "Ligurian Sea Cetacean Sanctuary) | seas of [Italy](https://en.wikipedia.org/wiki/Italy), [Monaco](https://en.wikipedia.org/wiki/Monaco) and [France](https://en.wikipedia.org/wiki/France) |
| The [Dry Tortugas](https://en.wikipedia.org/wiki/Dry_Tortugas) in the Florida Keys, | USA |
| The [Papahānaumokuākea Marine National Monument](https://en.wikipedia.org/wiki/Papah%C4%81naumoku%C4%81kea_Marine_National_Monument" \o "Papahānaumokuākea Marine National Monument) | [Hawaii](https://en.wikipedia.org/wiki/Hawaii) |
| The [Phoenix Islands Protected Area](https://en.wikipedia.org/wiki/Phoenix_Islands_Protected_Area) | [Kiribati](https://en.wikipedia.org/wiki/Kiribati) |
| The Channel Islands marine protected areas in [California](https://en.wikipedia.org/wiki/California) | USA |
| The [Chagos Archipelago](https://en.wikipedia.org/wiki/Chagos_Archipelago" \o "Chagos Archipelago) | [Indian Ocean](https://en.wikipedia.org/wiki/Indian_Ocean) |
| The [Wadden Sea](https://en.wikipedia.org/wiki/Wadden_Sea" \o "Wadden Sea) | bordering the [North Sea](https://en.wikipedia.org/wiki/North_Sea) in the Netherlands, Germany, and Denmark |

It should be noted that the International Maritime Organization (IMO) also identified areas called Particularly Sensitive Sea Areas (PSSA) that need special protection through action because of their significance for recognized ecological, socio-economic or scientific reasons and which may be vulnerable to damage by international maritime activities. When a PSSA is designated, an Associated Protective Measure is adopted by IMO to prevent, reduce, or eliminate the threat or identified vulnerability.[[1]](#footnote-1)

## Organizations in charge of PA and MPA

Depending on countries, one or more organizations or jurisdictions are in charge of PAs and MPAs from an international, supranational, national, regional, local to a private scale. The legislative and policy framework is well defined in every government.

# way forward

According to regulations on PAs or MPAs, restrictions should be applied in cases such as:

* Any new construction or extension work of any structures already existing;
* Any modifications of characteristics of water or land;
* Discarding harmful substance affecting the water quality, waste, and toxic;
* Access during certain times of the year (nesting period);
* Damage that can be caused and moving of some elements related to the conservation of the environment; OR Negative impact on the conservation of the environment when relocating some elements
* Any other behavior harmful to the conservation of the environment.

This is why, one of the first actions a Competent Authority should take before the creation, review, modification or removal of an AtoN, is to examine whether the project is in or near a PA or MPA. In such case, the Competent Authority has to contact the responsible department or organization to inquire about the right procedures to follow in such an area. The Competent Authority must be aware of all levels of governance implicated for a given area.

## The basic principles of AtoN management in A PA and MPA

AtoN in protected areas have to be installed and maintained for the safety of navigation and/or to mark the area. Conservation and management of the environment should not be disturbed by the management of an AtoN. The ecological balance should be preserved when operating and managing AtoN in protected areas. If ecosystems and landscapes are damaged or destroyed, all possible efforts should be made to restore the area. In order to minimize the impacts on marine ecosystems caused by the installation and maintenance of AtoN in protected areas, neighboring country/countries should cooperate with each other.

## Management of AtoN in PA and MPA

In case an AtoN is in a PA or MPA, and based on the restrictions of the PA or MPA, the Competent Authority should evaluate if the use of an AtoN is required, or if there is an alternative option, like choosing a different location, using a different type of AtoN *(AIS?),* or considering rerouting the traffic to avoid the area and therefore avoiding the need to place an AtoN, etc.

Competent Authority should also consider a countermeasure for environmental conservation and AtoN management to prevent excessive damage to the marine ecosystem caused by any activity related to AtoN like using special type of anchoring safe for the ground.

It is recommended that Competent Authority takes reinstatement measures should there be damage on marine ecosystems as a result of the installation, operation and removal of an AtoN in PA and MPA.

Competent Authorities should invest in research, development of technology and specialized worforce for AtoN, to minimize the impact on the surrounding environment.

### Setting up a new AtoN

Regarding the design and installation of a new AtoN, some criteria should be considered with respect to the environment, such as:

* Materials used for all parts of the system;
* Pollution brought by AtoN like light, colour, noise, paint, fuel, …;
* Power requirements, autonomy;
* Access requirements in relation to the protection regime;
* Type of AtoN: floating (anchoring/on position radius), fixed (offshore/shore);
* Possibility of risk mitigation considering failure of AtoN, seasonal restrictions related to access;
* Degree of Redundancy necessary (to reduce the frequency/ need to visits, seasonal restrictions etc);
* Monitoring system to minimize access to AtoN.

### Existing AtoN

In the long term, existing AtoN in PA or MPA should be reviewed, Competent Authority should determine the best solution by comparing efficiency between maintenance, relocation, reviewing design or replacing it, regard to environment protection.

All possibilities, even removal of AtoN must be took into consideration.

### Removal of an AtoN

Specific consideration should be taken during the dismantling of the AtoN in a PA or MPA (particularly in the case of an older AtoN). Competent Authority should provide a remediation plan in order to have less impact on the environment.

### Use of Virtual AIS

Even if it seems to be the best solution, referring to OMI MSC1/circ.1473, the use of virtual AIS AtoN should be restricted.

“*when considering the establishment or deployment of AIS AtoN, the competent AtoN service authority or provider should take special precaution to the primary purpose of AIS for collision avoidance, and that not all ships may carry equipment capable of transmitting or receiving AIS messages, such as leisure craft, fishing boats and warship*”

“*Virtual AIS AtoN should not be used for permanently marking an object for which Physical AtoN would be possible, but, may be considered for marking an object or feature where it is difficult or economically unreasonable to establish a Physical AtoN due to environmental constraints e.g. deep water, harsh sea conditions. Another case of the permanent application of Virtual AIS AtoN is for example marking a shoal that changes with time due to current or weather effects; and, where the object or feature is impossible to maintain as charted because of changes that occur over time*”

*The First Global Integrated Marine Assessment notes "No part of the ocean has today completely escaped the impact of human pressures, including the most remote areas."*

*The United Nations Convention on Biological Diversity set up an international target of conserving 10% of marine areas by 2020 through systems of protected areas and other effective area-based conservation measures. Canada and list other countries signed this Convention.*

From: <https://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=0AC17F87-1> Please refer to footnotes. I think there some interesting reading and references.

# FIGURES

1. Example figure
2. Another example figure[[2]](#footnote-2)

# REFERENCES

Body text

1. Abcd
2. Efgh
4. GUIDANCE (EXAMPLE OF AN ANNEX ON A LANDSCAPE PAGE)

Body text

1. An example of an ANNEX heading level 1 [*followed by style: heading separation line – landscape]*

Body text

* 1. an example of an annex heading level 2

Body text

* + 1. An example of an annex heading level 3

Body text

* + - 1. An example of an annex heading level 4

Body text

1. Example table

| No | Title/Topic | IMO References | Requirements | Possible Audit Questions | Remarks |
| --- | --- | --- | --- | --- | --- |
| 1 | Table text | Table text | Table text | Table text | Table text |
| Table text | Table text |
| Table text | Table text |

1. Example of an Appendix Title
2. APPENDIX HEADING 1

Body text

* 1. APPENDIX HEADING 2

Body text

* + 1. APPENDIX HEADING 3

Body text

* + - 1. Appendix Heading 4

Body text

1. CHECKLIST FOR (Example Annex Title)
2. Introduction (Example Annex Heading 1)

Body text.

* 1. Example of an ANNEX HEADING Level 2

Body text

* + 1. Example of an annex heading level 3

Body text

* + - 1. Example of an annex heading level 4

Body text

1. <http://pssa.imo.org/#/intro> [↑](#footnote-ref-1)
2. Example of footnote text [↑](#footnote-ref-2)