

# **Key Biodiversity Area: a way to identify sites of significance for biodiversity**

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**Conservation International**

**CONSERVATION  
INTERNATIONAL**





# KBAs and Aichi Biodiversity Targets

## Target 11

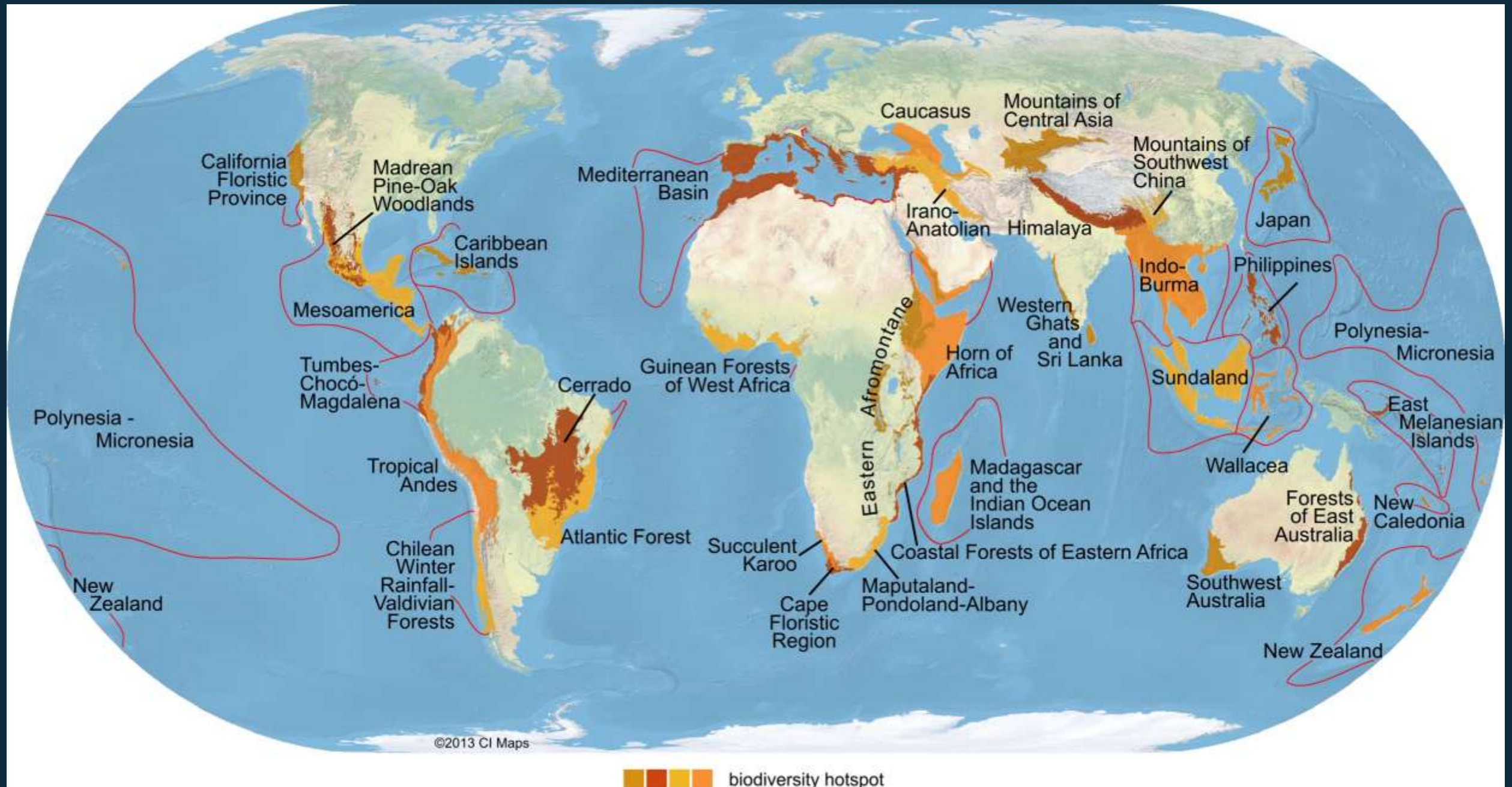
By 2020, at least 17 % of terrestrial and inland water, and 10 % of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

## Target 12

By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

# Biodiversity Hotspots

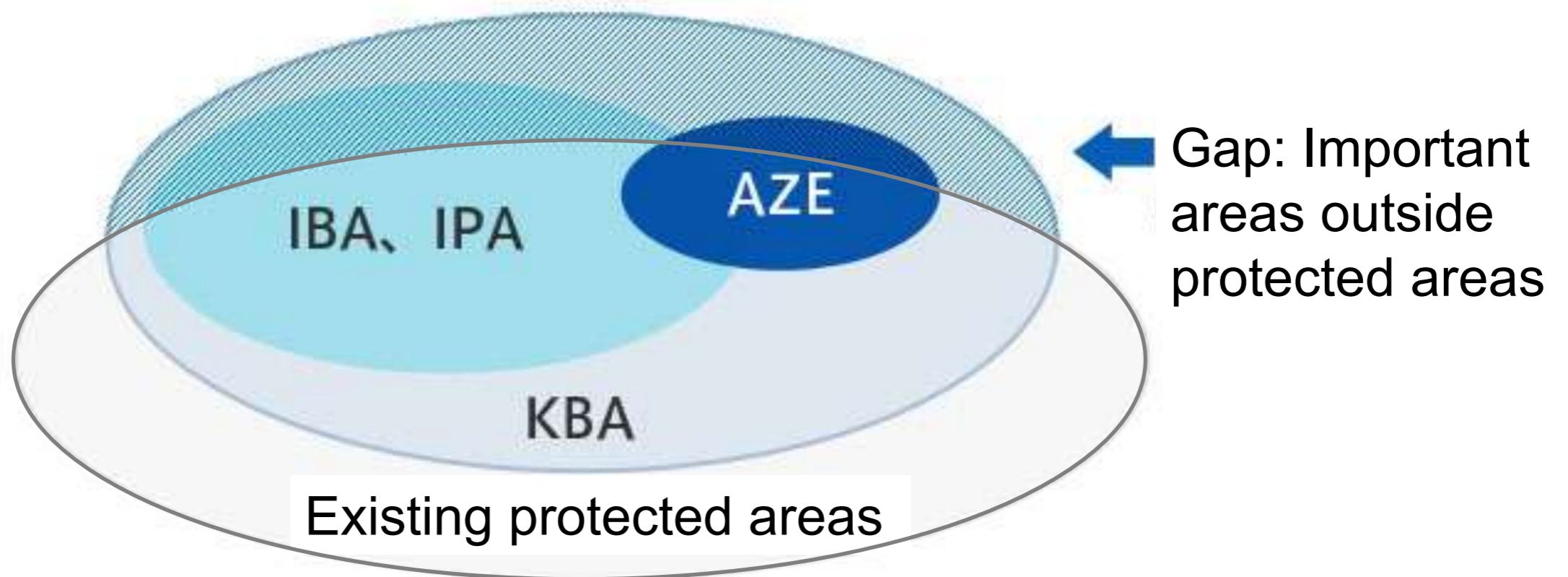
Uneven distribution of biodiversity



- At least 1500 endemic vascular plants
- More than 70% of the original habitat has been lost
- Eco-region as the unit



# Important areas for biodiversity: various selection processes



KBA: Key Biodiversity Areas

IBA: Important Bird Areas

IPA: Important Plant Areas

AZE: Alliance for Zero Extinction sites

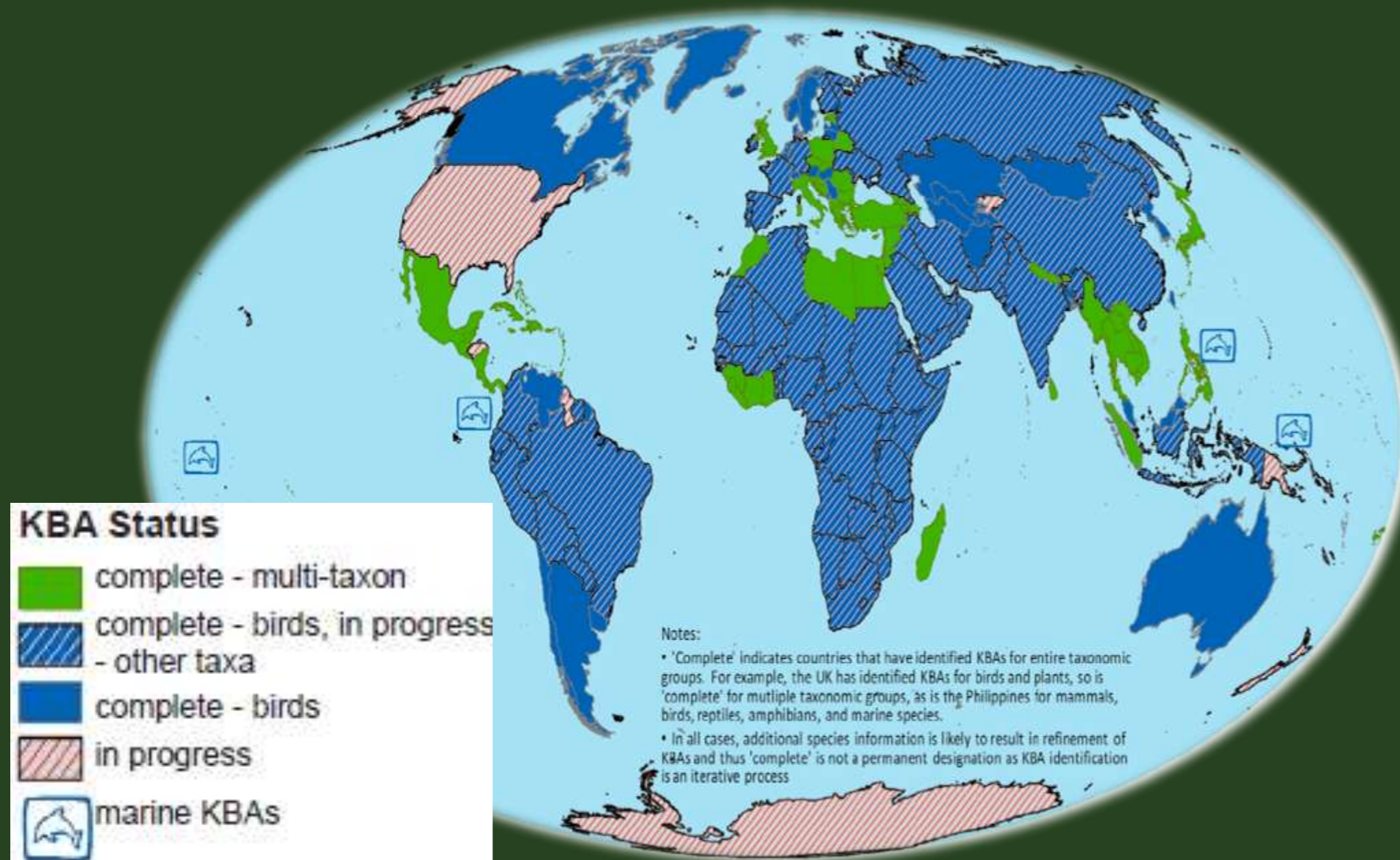
# Criteria for triggering KBAs

| Criterion        | Description  | Sub-criterion  | Threshold  |
|------------------|--|--|--|
| Vulnerability    | Regular occurrence of a globally threatened species (according to IUCN Red List) at the site |  | Regular presence of a single individual for CR and EN species;<br>Regular presence of 30 individuals or 10 pairs for VU species. |
| Irreplaceability | Site holds X% of a species' global population at any stage of the species lifecycle          | Restricted-range species (Species with a global range less than 50,000 km <sup>2</sup> ) | 5% of global population at site  |
|                  |  | Species with large but clumped distributions   | 5% of global population at site  |
|                  |  | Globally significant congregations   | 1% of global population seasonally present at site   |
|                  |  | Globally significant source populations  | Site is responsible for maintaining 1% of global population  |

A site is important if it supports globally threatened species

A site is important if a species' persistence is dependent on that particular site's condition

# Global progress in KBA identification



Source: Foster et al. (2012) Journal of Threatened Taxa





# Criteria for triggering KBAs (as applied in Japan)

| Criterion        | Modification in Japan  |
|------------------|--|
| Vulnerability    | <ul style="list-style-type: none"><li>• Sites with the presence record of at least one CR or EN species</li><li>• Sites with the presence records of multiple VU species</li><li>• Sites with species endemic to Japan listed as threatened in Japan red list that are not listed in the IUCN red list</li><li>• Sites with a single VU species were not identified as KBAs if that species is represented in other KBAs</li></ul> |
| Irreplaceability | <ul style="list-style-type: none"><li>• (Mammals and amphibians only) Species with global range less than 50,000 km<sup>2</sup> and those with known occurrence in well-defined localities</li><li>• (Birds only) Sites meeting IBA criteria A2, A3 and/or A4</li></ul>  |



# KBA identification process

## Results of similar processes

- IBA
- AZE



## Presence data on Trigger Species

- National survey on the Natural Environment
- Published articles
- Important Wetlands 500

## Identify trigger species

- IUCN Red List
- (national RL)

KBA  
identified

## Reference of boundaries

- Existing protected areas
- Vegetation maps
- Municipal boundaries



# Trigger Species

## Mammals

| Criterion | Name   |
|-----------|--|
| CR        | <i>Pteropus pselaphon</i>                    |
| CR        | <i>Myotis yanbarensis</i>                    |
| CR        | <i>Prionailurus bengalensis iriomotensis</i> |
| CR        | <i>Tokudaia muenninki</i>                    |
| CR        | <i>Murina tenebrosa</i>                      |
| EN        | <i>Enhydra lutris</i>                        |
| EN        | <i>Crociodura orii</i>                       |
| EN        | <i>Mogera etigo</i>                          |
| EN        | <i>Myotis pruinosus</i>                      |
| EN        | <i>Pipistrellus endoi</i>                    |
| EN        | <i>Eptesicus japonensis</i>                  |
| EN        | <i>Miniopterus fuscus</i>                    |
| EN        | <i>Murina ryukyuna</i>                       |
| EN        | <i>Tokudaia osimensis</i>                    |
| EN        | <i>Tokudaia tokunoshimensis</i>              |
| EN        | <i>Diplothrix legata</i>                     |
| EN        | <i>Pentalagus furnessi</i>                   |
| EN        | <i>Eumetopias jubatus</i>                    |
| VU        | <i>Nyctalus furvus</i>                       |
| RR        | <i>Crociodura watasei</i>                    |
| RR        | <i>Mogera tokudae</i>                        |
| RR        | <i>Mogera uchidai</i>                        |
| RR        | <i>Pteropus loochoensis</i>                  |
| RR        | <i>Sorex hosonoi</i>                         |
| RR        | <i>Sorex shinto</i>                          |
| RR        | <i>Hipposideros turpis</i>                   |
| RR        | <i>Dymecodon pilirostris</i>                 |
| RR        | <i>Eurosaptor mizura</i>                     |

## Reptiles

| Criterion | Name                                  |
|-----------|---------------------------------------|
| CR        | <i>Opisthotropis kikuzatoi</i>        |
| EN        | <i>Mauremys mutica</i>                |
| EN        | <i>Takydromus toyamai</i>             |
| EN        | <i>Amphiesma conelarum</i>            |
| EN        | <i>Calamaria pfefferi</i>             |
| VU        | <i>Cuora flavomarginata</i>           |
| VU        | <i>Geoemyda japonica</i>              |
| VU        | <i>Goniurosaurus kuroiwae</i>         |
| VU        | <i>Plestiodon kishinouyei</i>         |
| VU        | <i>Plestiodon barbouri</i>            |
| VU        | <i>Takydromus dorsalis</i>            |
| VU        | <i>Sinomicrurus japonicus takarai</i> |

## Birds

| Criterion | Name                                    |
|-----------|---|
| CR        | <i>Sapheopipo noguchii</i>              |
| CR        | <i>Zoothera dauma major</i>             |
| EN        | <i>Gorsachius goisagi</i>               |
| EN        | <i>Ciconia boyciana</i>                 |
| EN        | <i>Platalea minor</i>                   |
| EN        | <i>Nipponia nippon</i>                  |
| EN        | <i>Anser cygnoides</i>                  |
| EN        | <i>Grus japonensis</i>                  |
| EN        | <i>Gallirallus okinawae</i>             |
| EN        | <i>Tringa guttifer</i>                  |
| EN        | <i>Ketupa blakistoni</i>                |
| VU        | <i>Phoebastria albatrus</i>             |
| VU        | <i>Phoebastria nigripes</i>             |
| VU        | <i>Egretta eulophotes</i>               |
| VU        | <i>Anser erythropus</i>                 |
| VU        | <i>Anas formosa</i>                     |
| VU        | <i>Aythya baeri</i>                     |
| VU        | <i>Mergus squamatus</i>                 |
| VU        | <i>Haliaeetus pelagicus</i>             |
| VU        | <i>Grus monacha</i>                     |
| VU        | <i>Grus vipio</i>                       |
| VU        | <i>Coturnicops exquisitus</i>           |
| VU        | <i>Eurynorhynchus pygmeus</i>           |
| VU        | <i>Scolopax mira</i>                    |
| VU        | <i>Larus saundersi</i>                  |
| VU        | <i>Synthliboramphus wumizusume</i>      |
| VU        | <i>Pitta nympha</i>                     |
| VU        | <i>Turdus celaenops</i>                 |
| VU        | <i>Megalurus pryri</i>                  |
| VU        | <i>Locustella pleskei</i>               |
| VU        | <i>Phylloscopus ijimae</i>              |
| VU        | <i>Apalopteron familiare</i>            |
| VU        | <i>Emberiza sulphurata</i>              |
| VU        | <i>Garrulus lidhi</i>                   |
| RR        | <i>Columba janthina</i>                 |
| RR        | <i>Treron formosae</i>                  |
| RR        | <i>Otus elegans</i>                     |
| RR        | <i>Pericrocotus divaricatus tegimae</i> |
| RR        | <i>Erithacus komadori</i>               |
| A3        | <i>Locustella ochotensis</i>            |
| A3, A4    | <i>Aix galericulata</i>                 |
| A3        | <i>Prunella rubida</i>                  |
| A3        | <i>Butastur indicus</i>                 |
| A3        | <i>Erithacus akahige</i>                |
| A3        | <i>Syrnaticus soemmerringii</i>         |
| A3        | <i>Terpsiphone atrocaudata</i>          |
| A3        | <i>Charadrius placidus</i>              |
| A3        | <i>Emberiza variabilis</i>              |
| A3, A4    | <i>Vanellus cinereus</i>                |
| A3        | <i>Emberiza yessoensis</i>              |
| A3, A4    | <i>Gallinago hardwickii</i>             |
| A3        | <i>Sturnus philippensis</i>             |
| A3        | <i>Pericrocotus divaricatus</i>         |
| A4        | <i>Tringa nebularia</i>                 |
| A4        | <i>Phaethon rubricauda</i>              |
| A4        | <i>Accipiter soloensis</i>              |
| A4        | <i>Cerorhinca monocerata</i>            |
| A4        | <i>Phalacrocorax capillatus</i>         |
| A4        | <i>Larus crassirostris</i>              |
| A4        | <i>Sterna sumatrana</i>                 |
| A4        | <i>Sterna bergii</i>                    |
| A4        | <i>Oceanodroma tristrami</i>            |
| A4        | <i>Larus schistisagus</i>               |
| A4        | <i>Cygnus cygnus</i>                    |
| A4        | <i>Calonectris leucomelas</i>           |
| A4        | <i>Anas acuta</i>                       |
| A4        | <i>Sula leucogaster</i>                 |
| A4        | <i>Anatidae</i>                         |
| A4        | <i>Phalacrocorax carbo</i>              |
| A4        | <i>Heteroscelus brevipes</i>            |
| A4        | <i>Arenaria interpres</i>               |
| A4        | <i>Aythya fuligula</i>                  |
| A4        | <i>Oceanodroma matsudairae</i>          |
| A4        | <i>Sterna albifrons</i>                 |
| A4        | <i>Anas crecca</i>                      |
| A4        | <i>Branta bernicla</i>                  |
| A4        | <i>Cygnus atratus</i>                   |
| A4        | <i>Charadrius dubius</i>                |
| A4        | <i>Cygnus columbianus</i>               |
| A4        | <i>Charadrius alexandrinus</i>          |
| A4        | <i>Aythya marila</i>                    |
| A4        | <i>Xenus cinereus</i>                   |
| A4        | <i>Pluvialis squatarola</i>             |
| A4        | <i>Numenius phaeopus</i>                |
| A4        | <i>Calidris ruficollis</i>              |
| A4        | <i>Calidris alpina</i>                  |
| A4        | <i>Anser fabalis</i>                    |
| A4        | <i>Anas penelope</i>                    |
| A4        | <i>Oceanodroma monorhis</i>             |
| A4        | <i>Sterna dougallii</i>                 |
| A4        | <i>Bucephala clangula</i>               |
| A4        | <i>Aythya ferina</i>                    |
| A4        | <i>Anas platyrhynchos</i>               |
| A4        | <i>Anser albifrons</i>                  |
| A4        | <i>Calidris alba</i>                    |
| A4        | <i>Pluvialis fulva</i>                  |
| A4        | <i>Anas falcata</i>                     |
| A4        | <i>Oceanodroma leucorhoa</i>            |
| A4        | <i>Oceanodroma castro</i>               |

## Fishes

| Criterion | Name                                 |
|-----------|--------------------------------------|
| CR        | <i>Acheilognathus longipinnis</i>    |
| CR        | <i>Neosalanx regani</i>              |
| CR        | <i>Stiphodon imperioorientis</i>     |
| CR        | <i>Tanakia tanago</i>                |
| CR        | <i>Acheilognathus cyanostigma</i>    |
| CR        | <i>Acheilognathus typus</i>          |
| CR        | <i>Pseudorasbora pumila pumila</i>   |
| CR        | <i>Pseudorasbora pumila subsp.</i>   |
| CR        | <i>Sarcocheilichthys biwaensis</i>   |
| CR        | <i>Leptobotia curta</i>              |
| CR        | <i>Salanx ariakensis</i>             |
| CR        | <i>Pungitius sp. 1</i>               |
| CR        | <i>Pungitius sp. 2</i>               |
| CR        | <i>Sillago parvisquamis</i>          |
| CR        | <i>Scartelaos histophorus</i>        |
| CR        | <i>Lentipes armatus</i>              |
| CR        | <i>Rhinogobius sp. BI</i>            |
| EN        | <i>Hucho perryi</i>                  |
| EN        | <i>Pseudobagrus ichikawai</i>        |
| EN        | <i>Rhodeus atremius</i>              |
| EN        | <i>Acheilognathus melanogaster</i>   |
| EN        | <i>Hemigrammocypripis rasborella</i> |
| EN        | <i>Tribolodon nakamurai</i>          |
| EN        | <i>Cobitis takatsuensis</i>          |
| EN        | <i>Cobitis shikokuensis</i>          |
| EN        | <i>Lates japonicus</i>               |
| EN        | <i>Rhinogobius sp. BB</i>            |
| EN        | <i>Rhinogobius sp. YB</i>            |
| VU        | <i>Squalidus japonicus japonicus</i> |
| VU        | <i>Pseudobagrus tokiensis</i>        |
| VU        | <i>Acanthogobius insularis</i>       |

## Amphibians

| Criterion | Name                           |
|-----------|--------------------------------|
| CR        | <i>Hynobius abei</i>           |
| CR        | <i>Hynobius okiensis</i>       |
| EN        | <i>Cynops ensicauda</i>        |
| EN        | <i>Echinotriton andersoni</i>  |
| EN        | <i>Hynobius dunni</i>          |
| EN        | <i>Hynobius hidamontanus</i>   |
| EN        | <i>Hynobius takedai</i>        |
| EN        | <i>Babina holsti</i>           |
| EN        | <i>Babina okinavana</i>        |
| EN        | <i>Babina subaspera</i>        |
| EN        | <i>Limnonectes namiyai</i>     |
| EN        | <i>Odorrana amamiensis</i>     |
| EN        | <i>Odorrana ishikawae</i>      |
| EN        | <i>Odorrana narina</i>         |
| EN        | <i>Odorrana supranarina</i>    |
| EN        | <i>Odorrana utsunomiyaorum</i> |
| VU        | <i>Hynobius boulengeri</i>     |
| VU        | <i>Hynobius stejnegeri</i>     |
| VU        | <i>Hynobius tokyoensis</i>     |
| RR        | <i>Hynobius tsuensis</i>       |
| RR        | <i>Bufo torrenticola</i>       |
| RR        | <i>Hyla hallowellii</i>        |
| RR        | <i>Microhyla okinavensis</i>   |
| RR        | <i>Rana sakuraii</i>           |
| RR        | <i>Rana tsushimensis</i>       |
| RR        | <i>Rhacophorus owstoni</i>     |
| RR        | <i>Rhacophorus viridis</i>     |
| RR        | <i>Andrias japonicus</i>       |
| RR        | <i>Hynobius katoii</i>         |

## Odonates

| Criterion | Name                                     |
|-----------|--|
| EN        | <i>Cercion plagiosum</i>                 |
| EN        | <i>Mortonagrion Hirosei</i>              |
| EN        | <i>Copera tokyoensis</i>                 |
| EN        | <i>Indolestes boninensis</i>             |
| EN        | <i>Lestes japonicus</i>                  |
| EN        | <i>Rhinocypha ogasawarenensis</i>        |
| EN        | <i>Hemicordulia ogasawarenensis</i>      |
| EN        | <i>Libellula angelina</i>                |
| EN        | <i>Orthetrum poecilops</i>               |
| EN        | <i>Sympetrum maculatum</i>               |
| EN        | <i>Sympetrum uniforme</i>                |
| VU        | <i>Boninagrion ezoin</i>                 |
| VU        | <i>Trigomphus ogumai</i>                 |
| VU        | <i>Chlorogomphus brunneus keramensis</i> |
| VU        | <i>Chlorogomphus okinawensis</i>         |
| VU        | <i>Somatochlora clavata</i>              |
| VU        | <i>Boninthemis insularis</i>             |
| VU        | <i>Sympetrum gracile</i>                 |



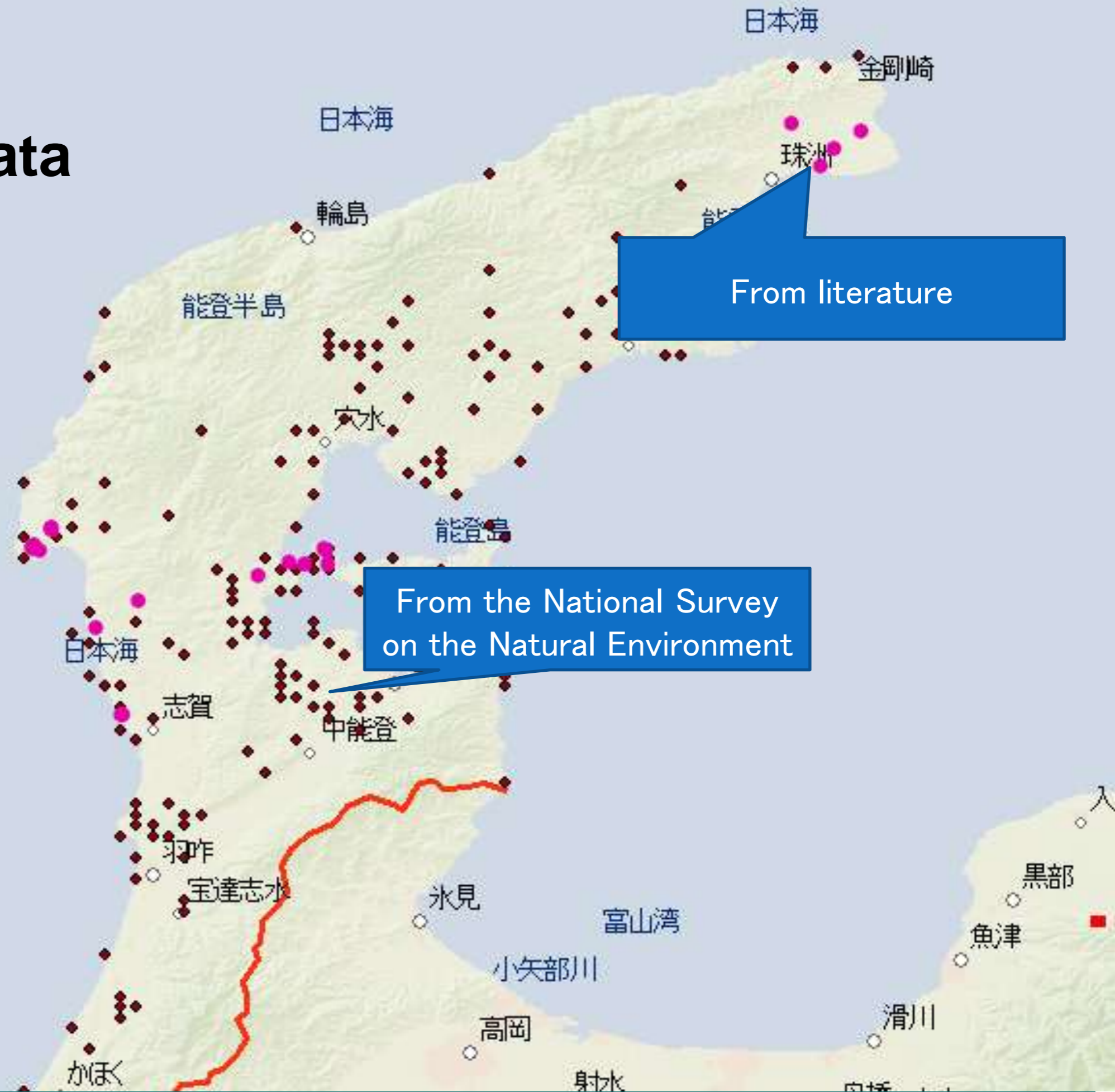
# KBA trigger species

| Taxa      | Vulnerability |    |    | Irreplaceability |              |                  | Total |
|-----------|---------------|----|----|------------------|--------------|------------------|-------|
|           | CR            | EN | VU | Restricted range | Congregation | Biome restricted |       |
| Mammal    | 5             | 13 | 1  | 9                | —            | —                | 28    |
| Bird      | 2             | 9  | 23 | 5                | 49           | 14               | 99    |
| Reptile   | 1             | 4  | 7  | —                | —            | —                | 12    |
| Amphibian | 2             | 14 | 3  | 10               | —            | —                | 29    |
| Fish      | 17            | 11 | 3  | —                | —            | —                | 31    |
| Odonate   | 11            |    | 7  | —                | —            | —                | 18    |
| Total     | 27            | 62 | 44 | 24               | 49           | 14               | 217   |



Ex) Noto Peninsula

# Presence data

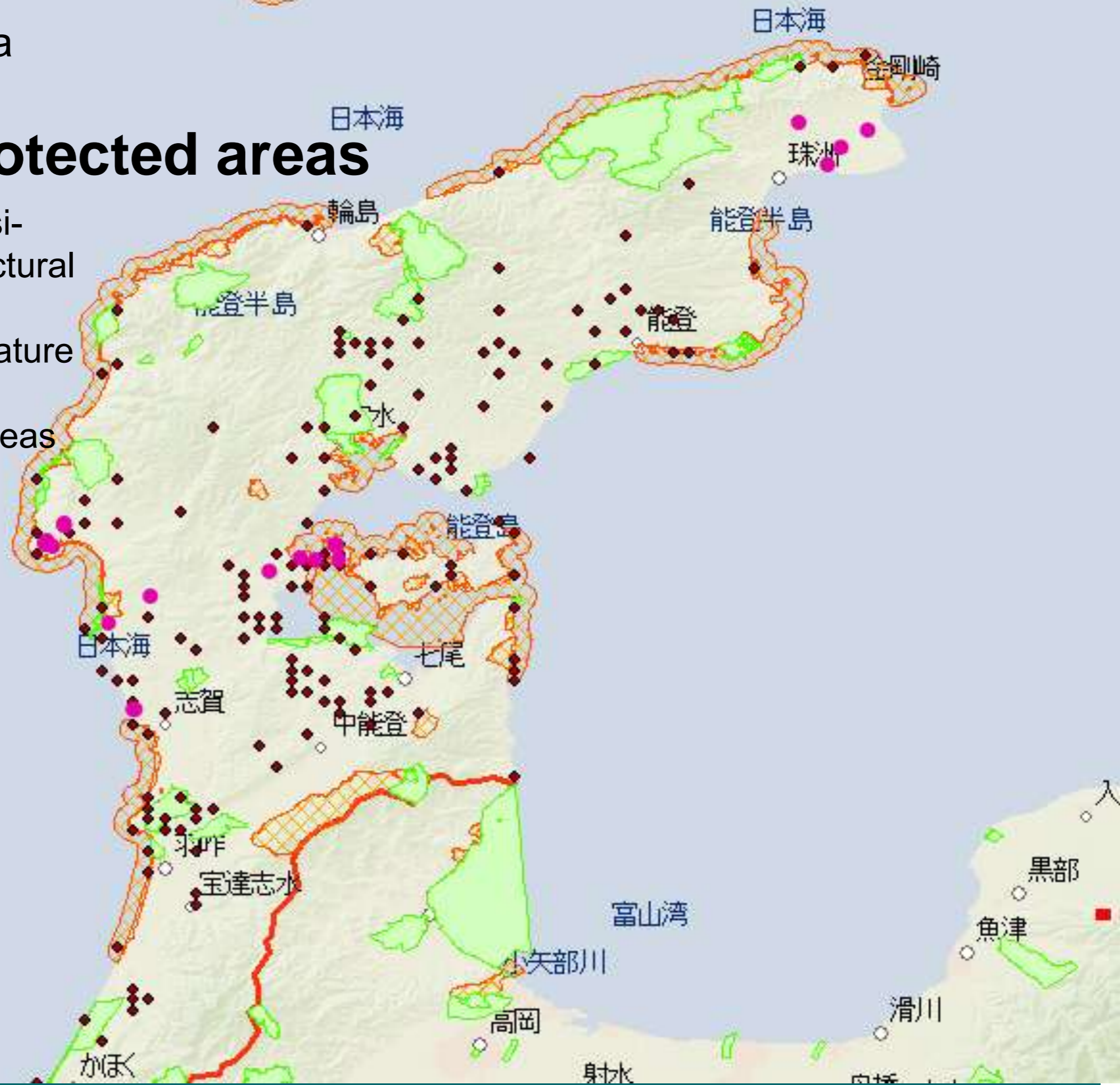




## Ex) Noto Peninsula

# Existing protected areas

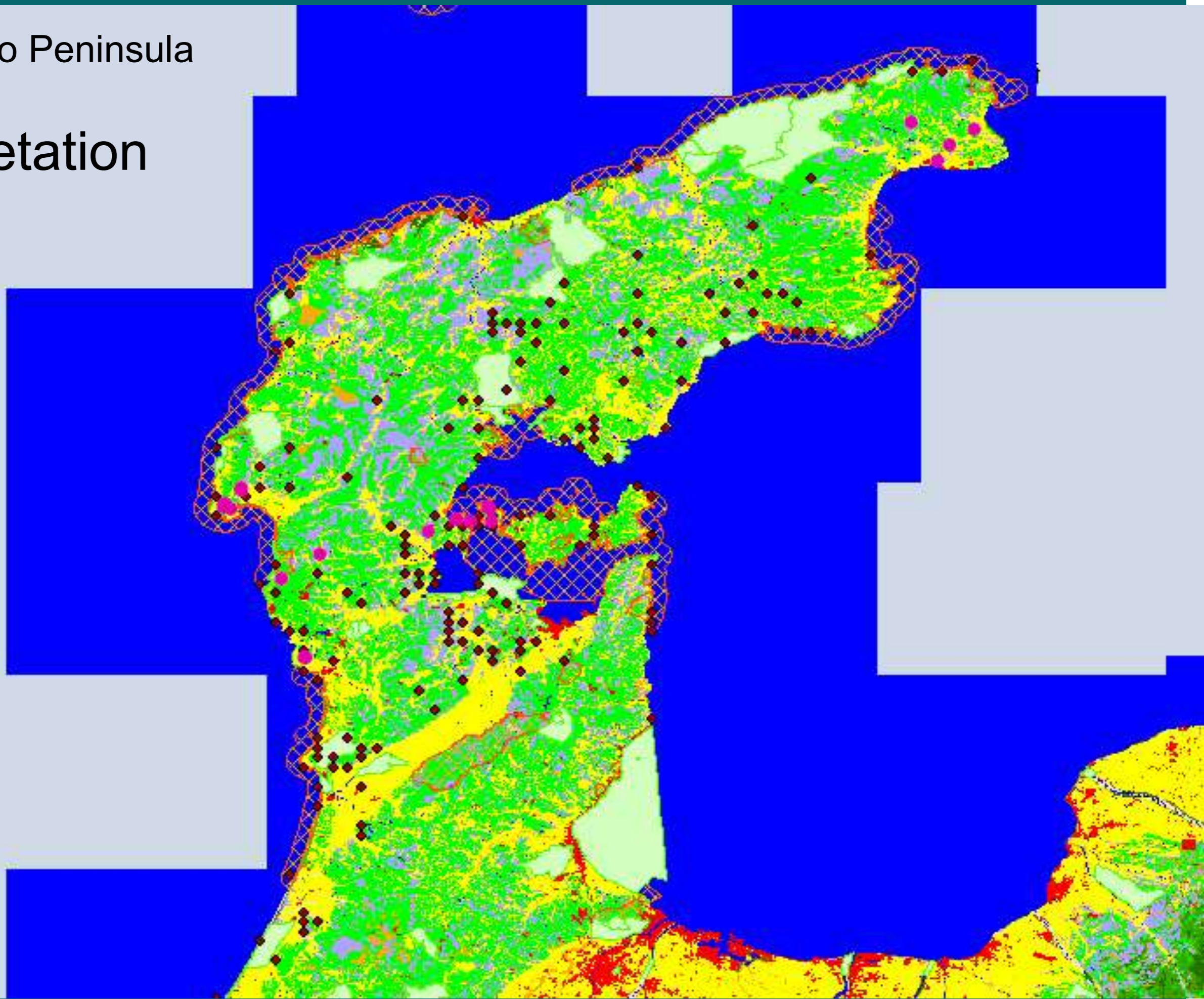
- National parks, Quasi-national Parks, Prefectural natural areas
- Wilderness Areas, Nature Conservation Areas
- Wildlife Protection Areas
- Forest Ecosystem Preservation Areas





Ex) Noto Peninsula

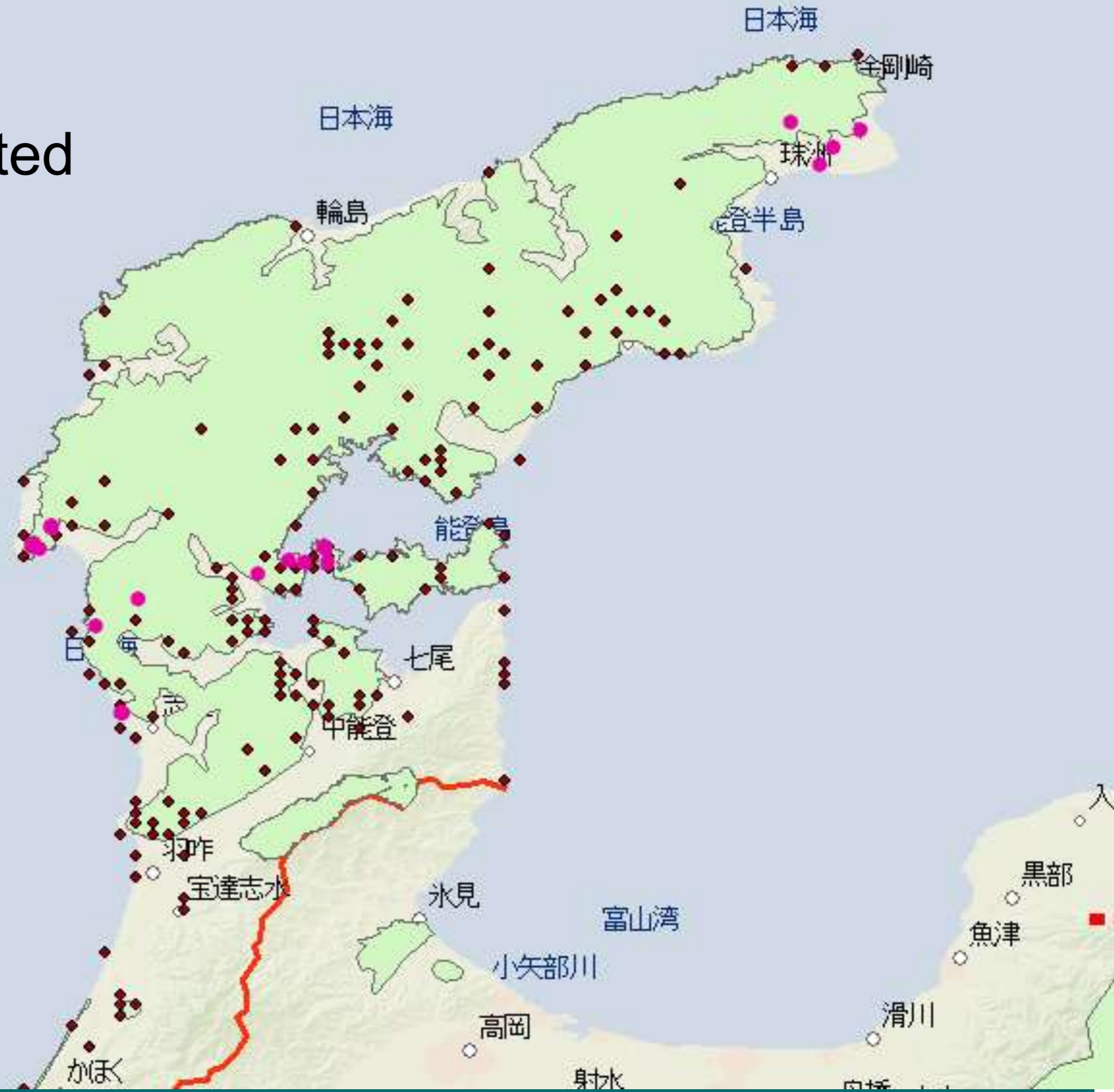
# Vegetation





Ex) Noto Peninsula

KBA delineated



# E.g.) Myoko and North Alps

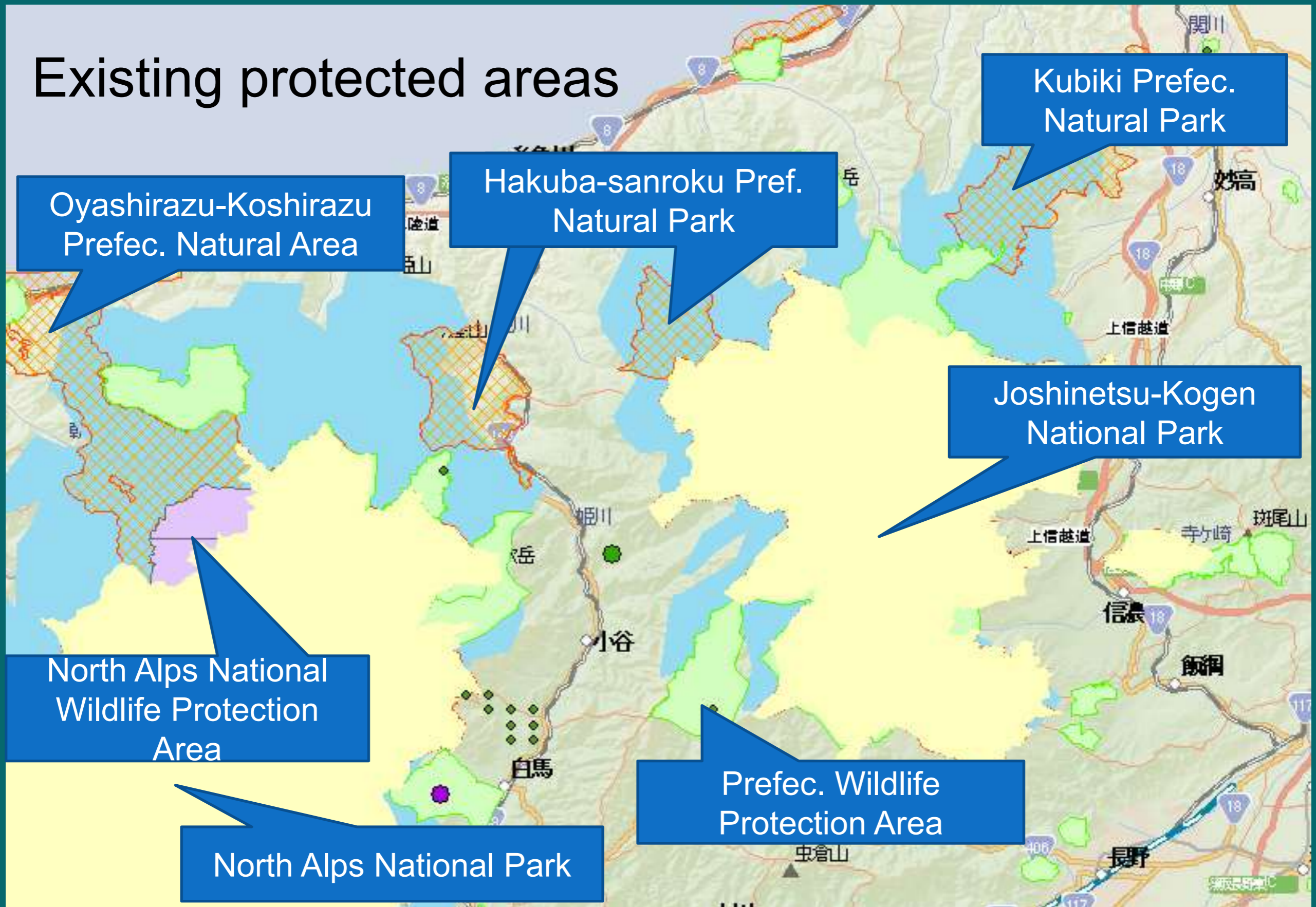
IBAs





E.g.) Myoko and North Alps

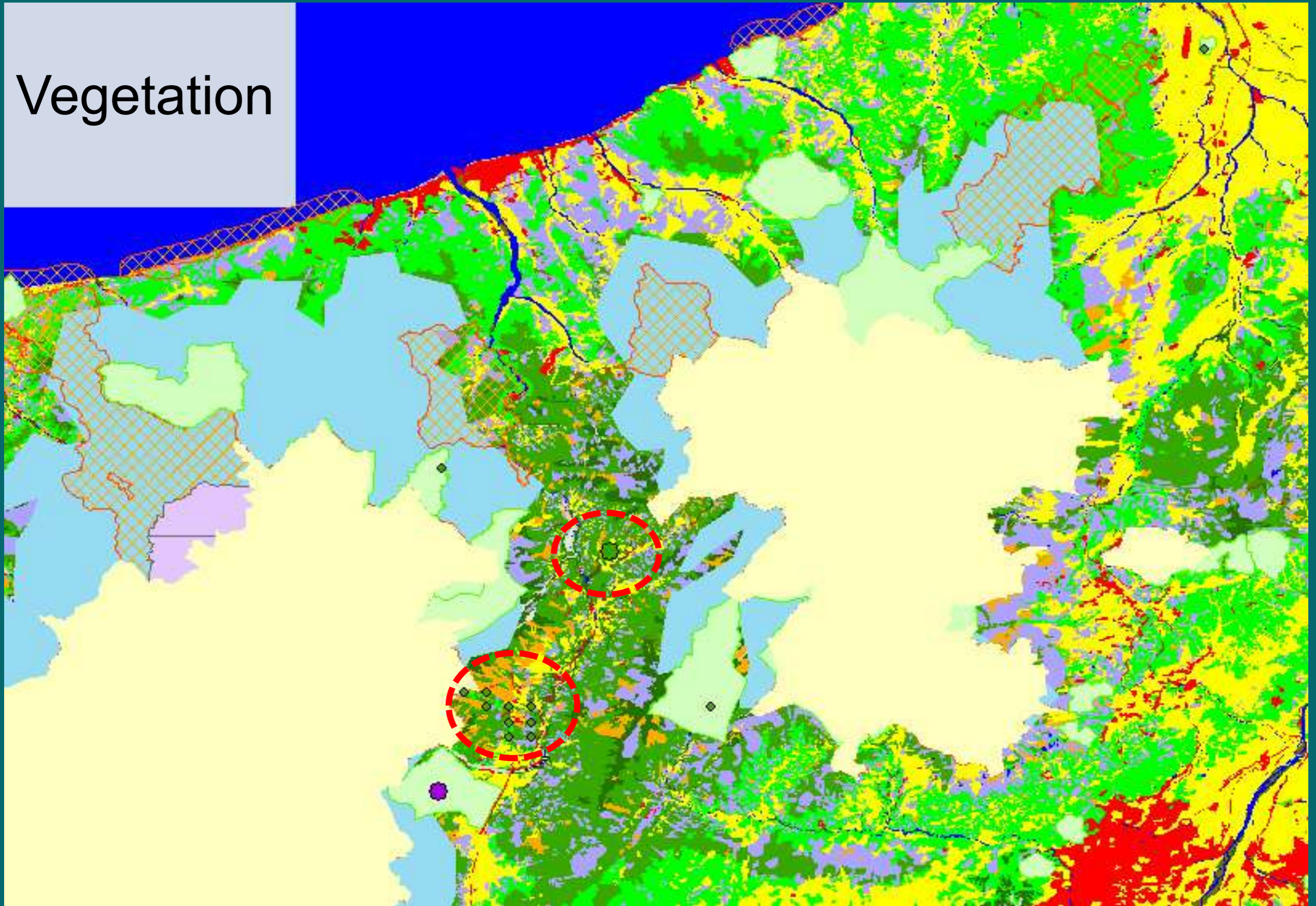
## Existing protected areas





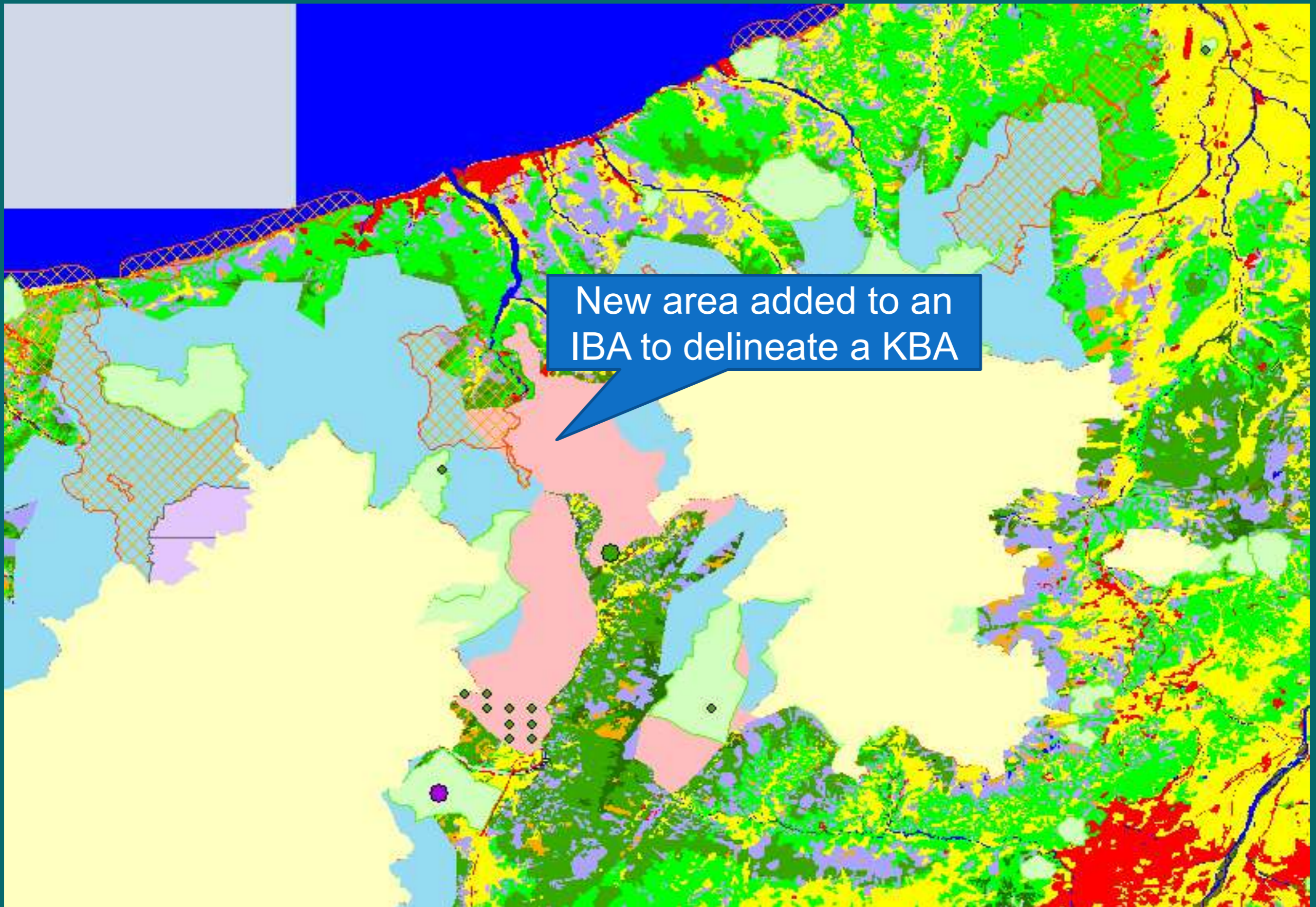
E.g.) Myoko and North Alps

Vegetation





## E.g.) Myoko and North Alps

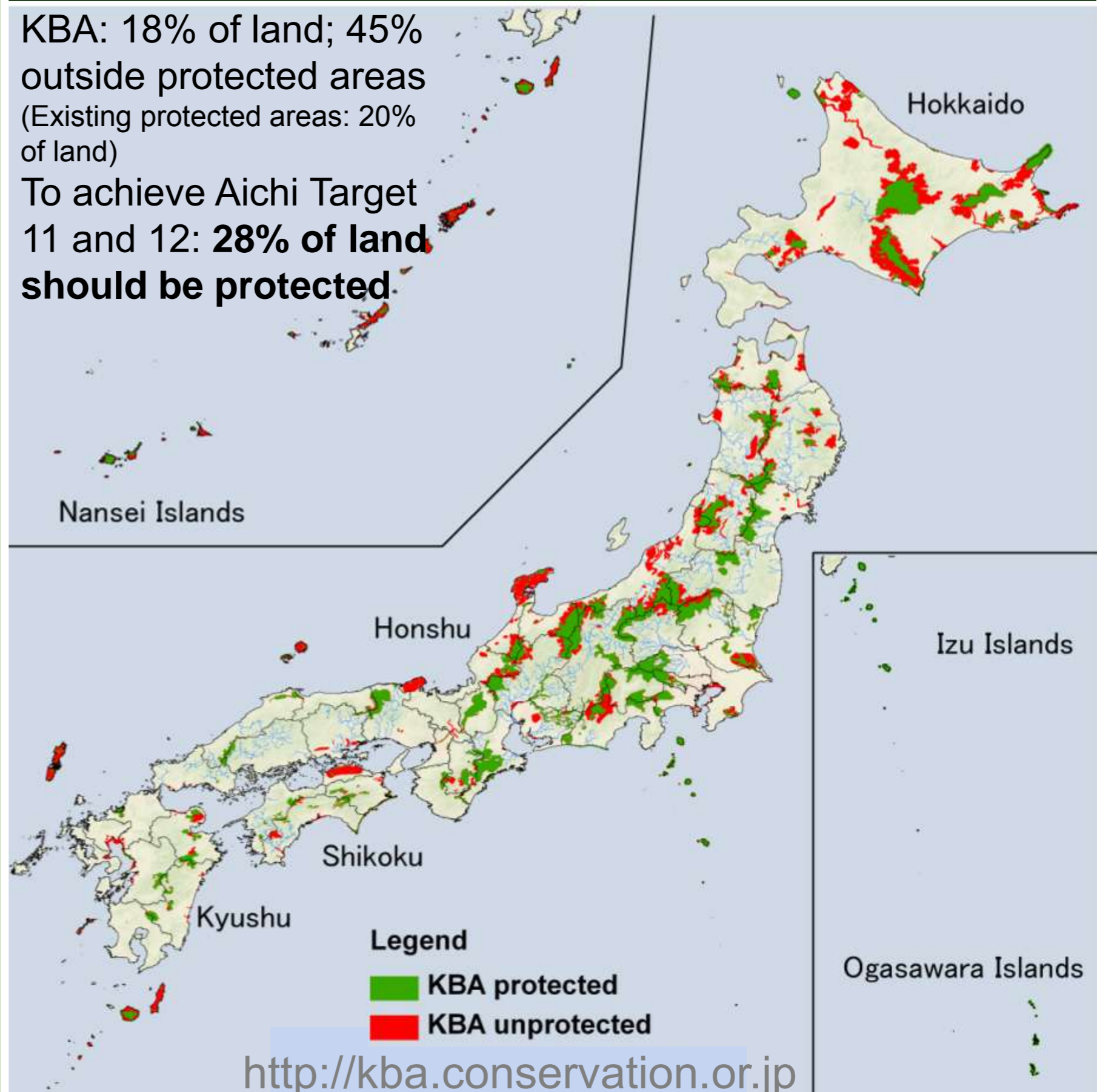




# KBAs in Japan

KBA: 18% of land; 45%  
outside protected areas  
(Existing protected areas: 20%  
of land)

To achieve Aichi Target  
11 and 12: **28% of land**  
**should be protected.**





# KBA summary (area, number)

|          | Total area (km <sup>2</sup> ) | #KBA | KBA area (km <sup>2</sup> ) (land only) | %KBA coverage of land | KBA protected (%) |
|----------|-------------------------------|------|---|-----------------------|-------------------|
| Japan    | 374,773                       | 228  | 65,812                                  | 17.6                  | 54.7              |
| Hokkaido | 77,967                        | 26   | 17,092                                  | 21.9                  | 36.3              |
| Honshu   | 228,489                       | 118  | 39,345                                  | 17.2                  | 65.7              |
| Shikoku  | 18,483                        | 12   | 1,748                                   | 9.5                   | 45.6              |
| Kyushu   | 37,543                        | 21   | 1,931                                   | 5.1                   | 76.7              |
| Islands  | 12,291                        | 51   | 5,696                                   | 46.3                  | 29.5              |

# KBA summary (#KBA by criterion)

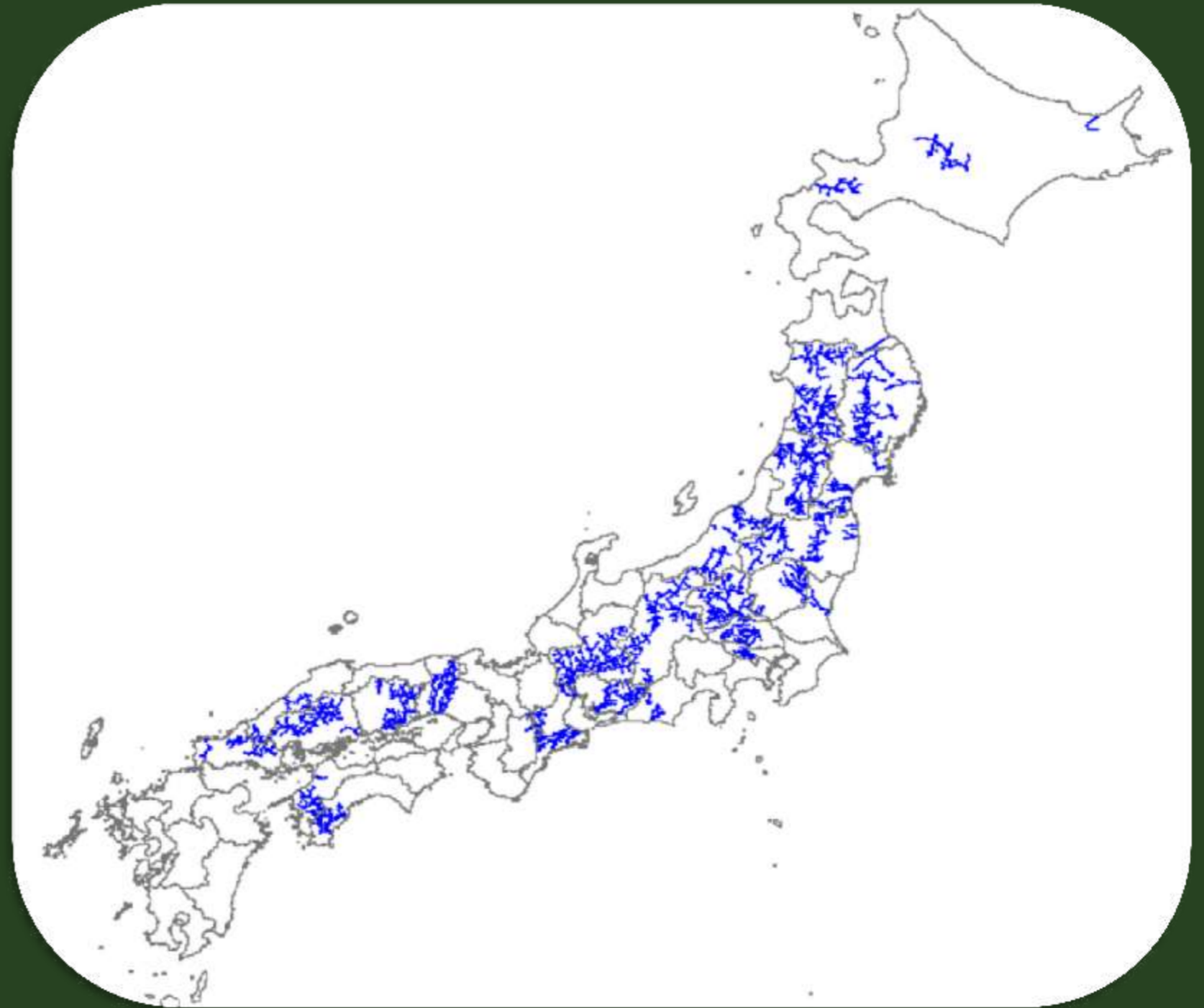
| Taxa      | Vulnerability |     |    | Irreplaceability |              |                  | Total |
|-----------|---------------|-----|----|------------------|--------------|------------------|-------|
|           | CR            | EN  | VU | Restricted range | Congregation | Biome restricted |       |
| Mammal    | 5             | 31  | 3  | 21               | 0            | 0                | 40    |
| Bird      | 2             | 17  | 44 | 17               | 97           | 42               | 151   |
| Reptile   | 1             | 2   | 7  | 0                | 0            | 0                | 7     |
| Amphibian | 5             | 14  | 18 | 18               | 0            | 0                | 46    |
| Fish      | 29            | 35  | 12 | 0                | 0            | 0                | 60    |
| Odonate   | 39            |     | 22 | 0                | 0            | 0                | 49    |
| Total     | 38            | 106 | 88 | 43               | 97           | 42               | 228   |



# Freshwater KBAs



Photo by M. Kohri



# Treatment of areas not included in KBAs

- Areas outside KBAs  $\neq$  Areas of no importance (they do not signify “go” for unconditional altering of site conditions.
- KBAs identifies only those areas that are known to be important based on the available data. There could always be unknown important areas. It means that there was no data to demonstrate the fulfillment of the criteria, rather than that data suggested the site did not meet the criteria.
- Not all taxa are yet included in consideration
- There could be importance from different perspectives





# Updating KBAs

## Update on physical changes

- Alteration of habitat conditions (Aichi Target 5)

## Update on information

- Additional trigger species from unrepresented taxa (e.g., plants, butterflies)
- New methods (freshwater KBA)
- New presence data (and disappearance data)
- IUCN Red List revisions
- Incorporate the work of *IUCN WCPA/SSC Joint Task Force on Biodiversity and Protected Areas* ([http://www.iucn.org/about/work/programmes/gpap\\_home/gpap\\_biodiversity/gpap\\_wcpabiodiv/gpap\\_pabiodiv/](http://www.iucn.org/about/work/programmes/gpap_home/gpap_biodiversity/gpap_wcpabiodiv/gpap_pabiodiv/))



# Acknowledgement



**KNCF**

Keidanren Nature  
Conservation Fund



公益財団法人

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Wild Bird Society of Japan

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# Thank you!

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