

Madrid, 12 March 2018

**ICCAT GBYP CIRCULAR # 0279 / 2018**

**SUBJECT: CALL FOR TENDERS ICCAT GBYP 03/2018 - AERIAL SURVEY ON SPAWNING  
AGGREGATION ATLANTIC-WIDE RESEARCH PROGRAMME ON BLUEFIN TUNA  
(ICCAT GBYP PHASE 8)**

I have the honour to transmit to you the attached Call for tenders ICCAT GBYP 03/2018 - Aerial Survey on Spawning Aggregation – Atlantic-Wide Research Programme on Bluefin Tuna (ICCAT GBYP Phase 8).

Please accept the assurances of my highest consideration.

**DISTRIBUTION:**

**– Commission Officers:**

Commission Chair:	R. Delgado
First Vice Chair:	S. Depypere
Second Vice Chair:	Z. Driouich
SCRS Chair:	D. Die

COC Chair:	D. Campbell
PWG Chair:	N. Ansell
STACFAD Chair:	H.A. Elekon



Driss Meski  
*Executive Secretary*

*Driss Meski*

**– Head Delegates / Head Scientists**

**– Cooperating Parties, Entities, or Fishing Entities**

**Attachment:** Call for tenders GBYP 03/2018, excel table of budget components.

**TERMS OF REFERENCE**  
**CALL FOR TENDERS GBYP 03/2018**  
**AERIAL SURVEY ON SPAWNING AGGREGATION**  
**ATLANTIC WIDE RESEARCH PROGRAMME ON BLUEFIN TUNA (ICCAT GBYP Phase 8)**

**Background and objectives**

The ICCAT Atlantic-Wide Research Programme on Bluefin Tuna (GBYP) is required to improve basic data collection, the understanding of key biological and ecological processes, assessment models and management. An important element of this programme is to carry out aerial surveys by transects in the Mediterranean Sea, where and when schools are traditionally sighted close to the surface to support the development of a fishery-independent index. As part of this programme, scientific institutions and public or private entities are asked to submit tenders to carry out the surveys.

**Contractor tasks**

The Contractor, who shall work in close consultation with the ICCAT GBYP Coordinator and the GBYP Steering Committee, shall conduct aerial surveys of one or more sub-areas covering the spawning aggregations identified in the attached maps. The four sub-areas to be surveyed are the following: Balearic Sea (sub-area A), southern Tyrrhenian Sea (sub-area C), central-southern Mediterranean Sea (sub-area E) and Levantine Sea (sub-area G). The same [sampling design](#) shall be used as in 2017. The Contractor is responsible for obtaining the flight permits.

The operational budget for this survey campaign is sufficient for several replicates (surveys) for each area, according to the survey design (plus a maximum of 20% of the days as stand-by time for adverse weather conditions). The offer is to specify the following: (a) type of aircraft (adequate for aerial spotting, possibly with upper wings, two propellers and good forward visibility, mandatorily equipped with bubble windows, one on each side); (b) availability of a pilot and a professional tuna spotter; (c) availability of two scientific spotters, belonging to scientific institutions that are independent from the fishing industries; d) the number of surveys and survey time provided for each sub-area.

The surveys shall be conducted only on bluefin tuna spawning aggregations in the period from May 28, 2018 to June 29, 2018, by each aircraft in each sub-area, at a spotting altitude of 300 m. The distance covered in a one-hour flight should be about 100 nm, with about 6 on-duty flight hours per day. It is reasonable to take into account adverse weather forecasts for 20% of the days (bad weather conditions mean winds over 3 on the Beaufort scale, or low clouds at less than 300 m altitude, or heavy rain, which prevents reliable observation of tuna schools close to the sea surface). It is mandatory to apply the [aerial survey protocol](#).

The Contractor shall provide a full GPS recording of all flights and sighting positions, together with the necessary way points when relevant. All sightings shall be documented with photos, preferably using a high resolution, geo-stabilised, GPS tagging, electronic camera. All photos shall be delivered along with the final report.

Each Contractor shall provide the sightings forms to ICCAT GBYP, duly filled, at the end of each week (24 hours maximum after the last flight), in order to allow for real-time checks and corrections.

Each Contractor, in case of award, shall ensure the participation of one official representative, the pilot(s), the professional spotter(s) and the scientific spotters in a training course (1 day) to be held at the ICCAT Secretariat in May 2018, possibly at short notice. Participation in the course is mandatory. The Contractor shall provide photos and the personal details of all the staff working on the survey before the training course.

**Contractor minimum qualifications**

- Documented multi-year experience in bluefin tuna studies and/or aerial surveys or censuses of marine populations; previous experience in tuna aerial survey is preferred.
- Availability of an adequate aircraft for aerial spotting, including a technical description of the aircraft equipped with two bubble windows (one on each side), piloted by a licensed pilot having documented experience in this field.

- Availability of at least one professional tuna spotter, who has documented multiyear experience in this field.
- Availability of at least two scientific observers, preferably with previous experience in tuna fisheries or biology, aerial surveys and/or census of marine populations, and who pertain to scientific institutions or entities independent of the fishing industries and who hold a university degree in one of the following: Fisheries Science, or Marine Biology or Natural Sciences or Biological Sciences or Environmental Sciences or closely related fields.
- Excellent working knowledge of one of the three official languages of ICCAT (English, French and Spanish). A good command of English is highly desirable.
- Bank or Insurance guarantee for the amount of the contract, to be provided before signature of the contract.

### **Request for bids**

Interested entities should submit an offer only to the ICCAT Executive Secretary ([driss.meski@iccat.int](mailto:driss.meski@iccat.int)) by **April 2, 2018**, including:

- a) A detailed offer, describing the sub-area(s) where the aerial survey will be carried out (for the identification of the sub-areas, please refer to the attached maps), the type of spotting aircraft to be used for the survey, the minimum number of flight hours to be guaranteed in total, the maximum number of stand-by days, the date for the interim report and the date for the final report;
- b) The curricula of the pilot, the professional spotter and the scientific observers;
- c) The curriculum of the institution or company applying for the GBYP Aerial Survey 2018, with any documented experience in aerial survey or marine population survey, to include recent and relevant contracts for the same or similar items and other references (including contract numbers, points of contact with telephone numbers and other relevant information);
- d) A preliminary estimated budget for the aerial survey, taking into account the proportion of the 1°x1° quadrants to be explored over the total of the quadrants where spawning activities were identified on the attached maps, and any discount terms (please use the attached table);
- e) The name, address, VAT/tax number and telephone number of the tendering body, along with the contact number of the person responsible for field activity;
- f) The institutional and administrative background of the tendering body (e.g. statutes, type of institution, annual budget, budget control procedures, etc.);
- g) If the aircraft proposed for the survey does not belong to the tendering body, then a declaration from its owner should be included, to define the availability of the aircraft for this duty and to ensure that the aircraft is properly insured for all risks by a primary insurance company; a copy of the subcontract or MOU should be also provided;
- h) A detailed list of any subcontracting activities;
- i) The declaration that the offering institution shall strictly follow the aerial survey design and the protocol provided by ICCAT GBYP prior to the beginning of the surveys, along with the forms to be used for the survey, and the administrative rules specified in the contract;
- j) A declaration that all the comments eventually made on the draft final report shall be incorporated in the final report prior to the submission to the ICCAT SCRS;
- k) A completed copy of the operating license and authorization (if applicable) and any administrative document, released by the competent public authority, demonstrating that the offering institution is authorized to operate the aerial survey;
- l) A declaration that the offering institution shall provide an insurance guarantee for the full amount of the contract, before its signature;
- m) A declaration that the offering institution shall be covered by full insurance for the aerial survey to be carried out according to the Call for tenders, excluding ICCAT from all liability concerning the work to be carried out by each offering institution;
- n) Acknowledgment of this Call for tenders;
- o) A statement specifying the extent of agreement with all terms, conditions, and provisions herein included.

Offers that fail to furnish the required documentation or information, or reject the terms and conditions of the Call for tenders may be excluded from consideration.

Contractors can be either research institutions such as government or private laboratories, universities, or private consultancy firms or other entities having the required qualifications.

The Contractor shall be available to report to any meeting requested by ICCAT.

The Contractor shall take onboard an ICCAT GBYP inspector or a national observer at any time, at short notice.

The ICCAT Secretariat shall make a selection of the offers and shall decide the contract(s) to be awarded. The awarded entity(ies) shall be notified shortly afterwards.

### **Deliverables**

- 1) The sighting forms concerning the first week of activities to be submitted by e-mail by **June 4, 2018**, at the latest, with the GPS tracks (electronic) and brief notes on specific problems.
- 2) The sighting forms concerning the second week of activities to be submitted by e-mail by **June 11, 2018**, at the latest, with the GPS tracks (electronic) and brief notes on specific problems.
- 3) The sighting forms concerning the third week of activities to be submitted by e-mail by **June 18, 2018**, at the latest, with the GPS tracks (electronic) and brief notes on specific problems.
- 4) The sighting forms concerning the fourth week of activities to be submitted by e-mail by **June 25, 2018**, at the latest, with the GPS tracks (electronic) and brief notes on specific problems.
- 5) The sighting forms concerning the fifth week of activities to be submitted by e-mail by **July 2, 2018**, at the latest, with the GPS tracks (electronic) and brief notes on specific problems.
- 6) The draft final report to be submitted at the latest by **July 6, 2018**, including:
  - a) Full description of the work carried out during the aerial survey;
  - b) Detailed description of the methodology;
  - c) Detailed maps of the areas in which the aerial survey was carried out, according to the aerial survey design;
  - d) Maps with the GPS tracks of the survey, by date;
  - e) Detailed maps of the sightings, with GPS positions;
  - f) Full copy of the official sighting forms, complete with full details;
  - g) Complete copy of the photos and videos taken during the survey (on DVD), including their reference;
  - h) Scientific report, prepared taking into account the aerial survey design and the relevant literature;
  - i) Summary.
  - j) A PowerPoint presentation of the main results for the ICCAT SCRS 2018 Bluefin Species Group Session or any other ICCAT SCRS meeting.
- 7) The definitive final report, to be prepared taking into account the eventual comments provided by ICCAT, and the full administrative report including copies of all administrative documents, to be submitted by **July 18, 2018**, at the latest.

### **Payment details**

Disbursements shall be made according to the following schedule:

1. 40% of the total amount of the contract upon signing of the contract;
2. 40% upon providing Deliverable No. 4;
3. 20% after the approval of the final report upon incorporation of comments made by ICCAT and the approval of the administrative documents.

### **Logistics**

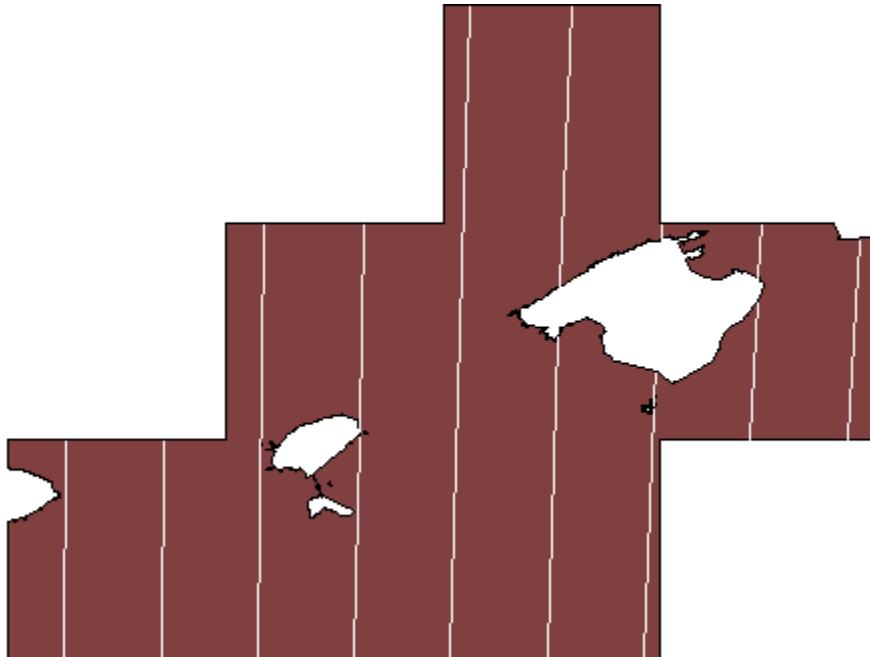
All documents provided by the Contractor must be in MS Word or compatible software, tables must be in Excel format or compatible, figures and pictures must be in JPEG or TIFF format or compatible. All documents submitted must be in English, French or Spanish.

### **Copyright**

All of the material produced by the Contractor shall remain the property of ICCAT GBYP and it must be kept confidential.

## Area A – Balearic Sea

### Replica 1



Sample layer name: 4 replicas - Replica 1

Type of sampler: Line

Number of samplers: 9

List of samplers:

x-coord y-coord

Sampler 1

0.2583678 38.00301

0.2619573 39.00083

--

Sampler 2

0.7029468 38.00687

0.7126764 39.00088

--

Sampler 3

1.147536 38.00904

1.180177 40.00064

--

Sampler 4

1.592098 38.00954

1.614641 39.02552

--

1.614902 39.03696

1.637388 40.001

--

Sampler 5

2.036596 38.00835

2.125908 41.00048

--

Sampler 6

2.480994 38.00548

2.532698 39.4832

--

2.540668 39.7016

2.589941 41.00105

--

Sampler 7

2.925253 38.00093

2.972318 39.15113

--

2.9726 39.15783

2.974146 39.1945

--

2.974319 39.1986

2.974356 39.19948

--

2.97443 39.20124

2.979456 39.31997

--

3.005592 39.92621

3.008829 40.00003

--

Sampler 8

3.416599 39.00105

3.447902 39.6408

--

3.45315 39.74607

3.465957 40.00068

--

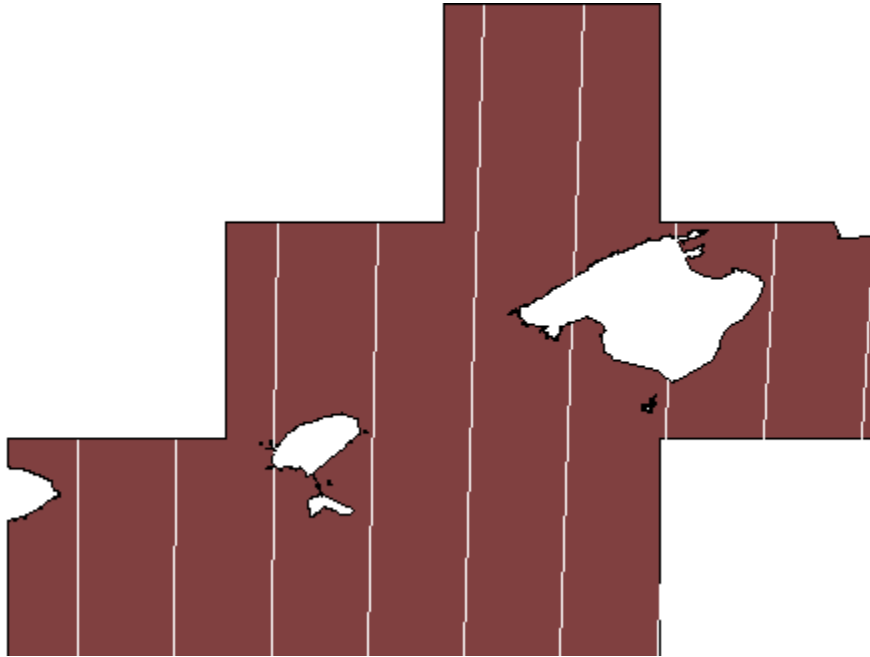
Sampler 9

3.867102 39.0005

3.918848 39.9278

--

## Replica 2



Sample layer name: 4 replicas - Replica 2

Type of sampler: Line

Number of samplers: 9

List of samplers:

x-coord y-coord

Sampler 1

0.3192211 38.00364

0.3236538 39.00094

--

Sampler 2

0.7638037 38.00727

0.7743702 39.00075

--

Sampler 3

1.208391 38.00921

1.222898 38.87397

--

1.223964 38.93608

1.22421 38.95042

--

1.224453 38.96451

1.242764 40.00079

--

Sampler 4

1.652947 38.00947

1.699968 40.00091

--

Sampler 5

2.097433 38.00805

2.189431 41.00067

--

Sampler 6

2.541814 38.00496

2.596893 39.53925

--

2.604521 39.74276

2.653452 41.00098

--

Sampler 7

2.986052 38.00018

2.999898 38.33849

--

3.027661 39.00011

3.039532 39.27648

--

3.068026 39.92466

3.071409 40.00023

--

Sampler 8

3.478273 39.00107

3.52852 40.00063

--

Sampler 9

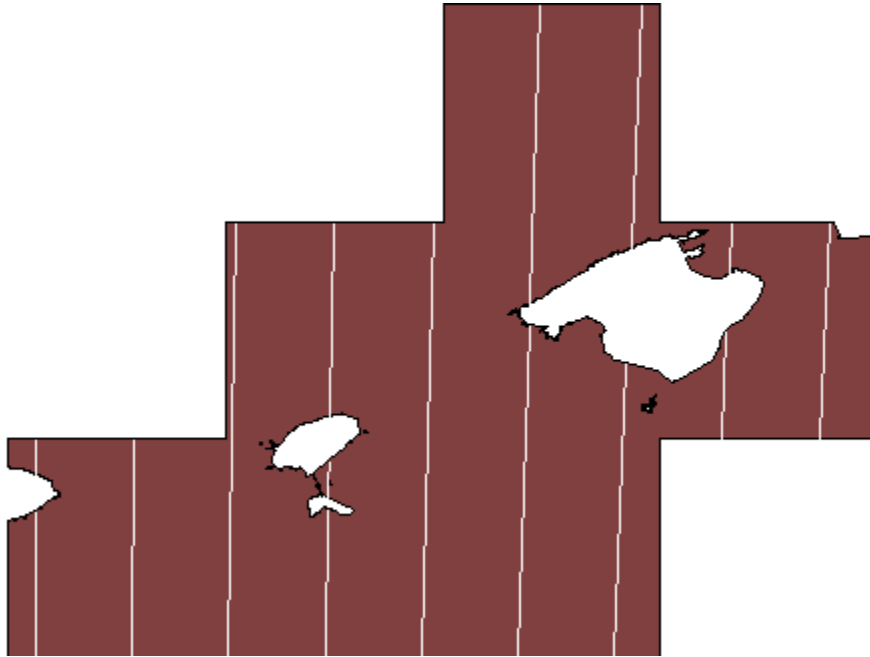
3.928756 39.00029

3.981499 39.93052

--



### Replica 3



Sample layer name: 4 replicas - Replica 3

Type of sampler: Line

Number of samplers: 9

List of samplers:

x-coord y-coord

Sampler 1

0.1246234 38.00153

0.1257849 38.67635

--

0.1260677 38.83732

0.1263568 39.00047

--

Sampler 2

0.5691922 38.00589

0.5770795 39.00105

--

Sampler 3

1.013782 38.00856

1.042617 40.00018

--

Sampler 4

1.458356 38.00956

1.471916 38.68252

--

1.472894 38.73019

1.47441 38.80386

--

1.474414 38.80405

1.476507 38.90535

--

1.480716 39.10748

1.499841 40.00108

--

Sampler 5

1.902878 38.00888

1.957008 40.00018

--

Sampler 6

2.347309 38.00652

2.39758 39.52364

--

2.400975 39.62207

2.450345 41.00108

--

Sampler 7

2.791614 38.00248

2.844497 39.35005

--

2.86623 39.87859

2.914311 41.00034

--

Sampler 8

3.281039 39.00087

3.304404 39.49994

--

3.316715 39.75796

3.328442 40.00067

--

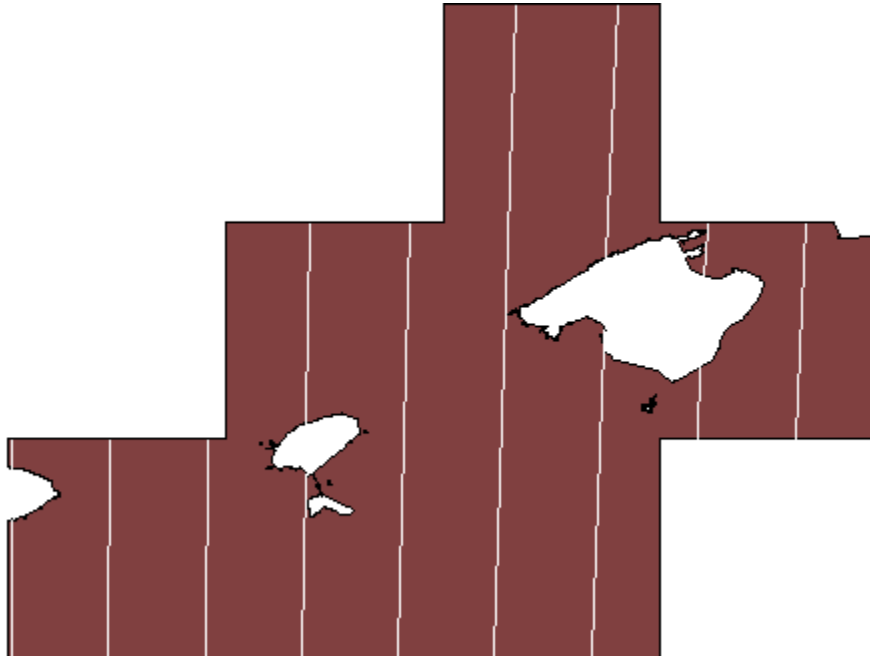
Sampler 9

3.731583 39.00084

3.78548 40.00006

--

#### Replica 4



Sample layer name: 4 replicas - Replica 4

Type of sampler: Line

Number of samplers: 9

List of samplers:

x-coord y-coord

Sampler 1

1.624355E-02 38.00021

1.638515E-02 38.63213

--

1.643915E-02 38.86799

1.646967E-02 39.00007

--

Sampler 2

0.4608016 38.00498

0.4671927 39.00107

--

Sampler 3

0.9053898 38.00807

0.9178997 39.00032

--

Sampler 4

1.349971 38.00948

1.365741 38.85139

--

1.370041 39.075

1.388372 40.00103

--

Sampler 5

1.794509 38.0092

1.845557 40.00056

--

Sampler 6

2.238966 38.00725

2.337214 41.00097

--

Sampler 7

2.683305 38.00362

2.737633 39.44069

--

2.739741 39.49441

2.740482 39.51326

--

2.753089 39.83135

2.801205 41.00069

--

Sampler 8

3.171176 39.00061

3.186136 39.33261

--

3.205324 39.75056

3.215153 39.96131

--

3.215255 39.96348

3.216995 40.00055

--

## Area C – Southern Tyrrhenian Sea

### Replica 1



Sample layer name: 4 Replicas - Replica 1

Type of sampler: Line

Number of samplers: 6

List of samplers:

x-coord y-coord

Sampler 1

15.56295 38.29397

15.74683 39.92273

--

Sampler 2

15.07043 38.13248

15.26668 39.99473

--

Sampler 3

14.58809 38.06188

14.77776 39.9972

--

Sampler 4

14.1092 38.02568

14.28837 39.99945

--

Sampler 5

13.63199 38.01052

13.79836 39.99956

--

Sampler 6

13.16872 38.19486

13.30776 39.99752

## Replica 2



Sample layer name: 4 Replicas - Replica 2  
Type of sampler: Line  
Number of samplers: 6

List of samplers:

x-coord y-coord

Sampler 1

15.47723 38.27763

15.66918 39.9937

--

Sampler 2

14.98852 38.15279

14.98889 38.15665

--

14.98918 38.15954

15.18048 39.99495

--

Sampler 3

14.50242 38.04186

14.55019 38.56379

--

14.55236 38.58696

14.69151 39.99775

--

Sampler 4

14.02666 38.04222

14.20201 39.99963

--

Sampler 5

13.55124 38.05276

13.71189 39.99936

--

Sampler 6

13.08227 38.16378

13.08255 38.16779

--

13.08311 38.17577

13.2212 39.99694

--

### Replica 3



Sample layer name: 4 Replicas - Replica 3  
Type of sampler: Line  
Number of samplers: 6

List of samplers:

x-coord y-coord

Sampler 1

15.67952 38.24784

15.83609 39.62925

--

Sampler 2

15.19578 38.17209

15.39097 39.99034

--

Sampler 3

14.7167 38.1396

14.90256 39.99628

--

Sampler 4

14.22991 38.01733

14.41334 39.99908

--

Sampler 5

13.75268 38.00006

13.92348 39.99974

--

Sampler 6

13.29241 38.21873

13.43303 39.99825

--

#### Replica 4



Sample layer name: 4 Replicas - Replica 4  
Type of sampler: Line  
Number of samplers: 7

List of samplers:

x-coord y-coord

Sampler 1

15.88871 38.43923

15.90247 38.56153

--

15.917 38.68944

15.99869 39.38795

--

Sampler 2

15.39097 38.24304

15.58439 39.99395

--

Sampler 3

14.90957 38.19077

14.93554 38.45758

--

14.94182 38.52125

15.0956 39.99511

--

Sampler 4

14.41964 38.03928

14.6066 39.99823

--

Sampler 5

13.94294 38.02884

14.11699 39.99973

--

Sampler 6

13.47206 38.0997

13.62676 39.99909

--

Sampler 7

13.01553 38.39584

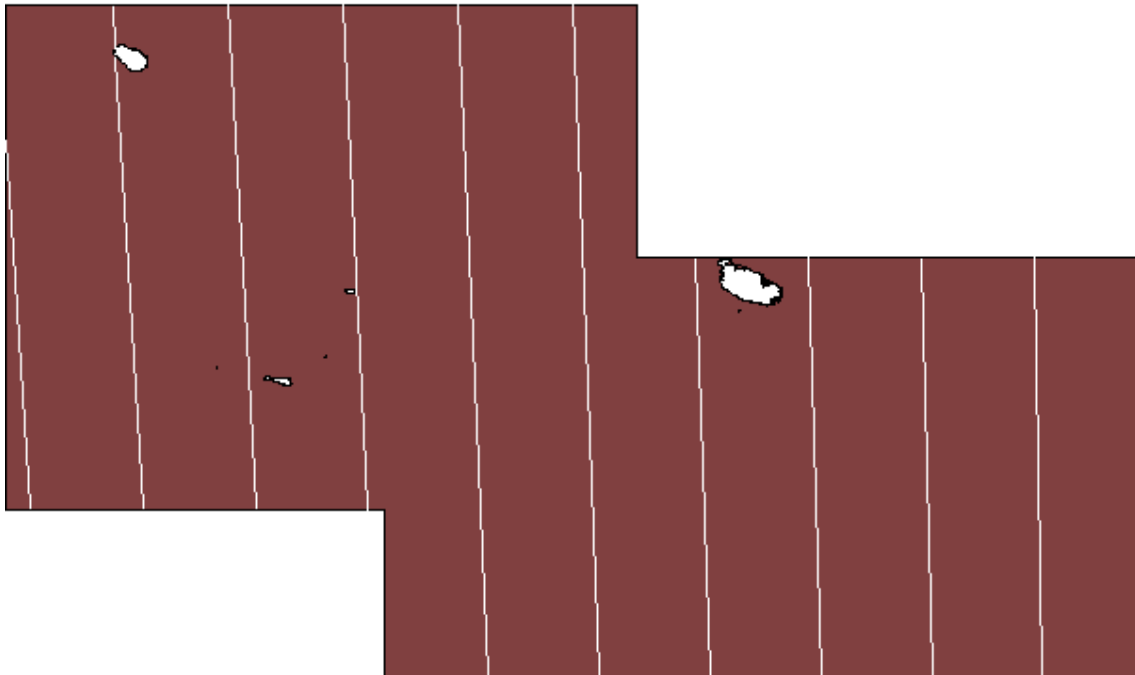
13.13598 39.9963

--



## Area E - Central-Southern Mediterranean Sea

### Replica 1



Sample layer name: 4 Replicas - Replica 1

Type of sampler: Line

Number of samplers: 10

List of samplers:

x-coord y-coord

Sampler 1

15.60554 34.33436

15.57477 36.00107

--

Sampler 2

15.16814 34.33393

15.12789 36.00049

--

Sampler 3

14.73004 34.33499

14.68035 36.00095

--

Sampler 4

14.29125 34.3369

14.23219 36.00078

--

Sampler 5

13.85187 34.33716

13.74642 37.00193

--

Sampler 6

13.41195 34.33578  
13.29086 37.00399

--

Sampler 7

12.93558 35.0004  
12.83476 37.00424

--

Sampler 8

12.49058 35.00215  
12.37814 37.00267

--

Sampler 9

12.04506 35.00221  
11.93318 36.79797

--

11.93143 36.82695  
11.921 37.00014

--

Sampler 10

11.59906 35.00059  
11.49863 36.46776

--

## Replica 2



Sample layer name: 4 Replicas - Replica 2

Type of sampler: Line

Number of samplers: 10

List of samplers:

x-coord y-coord

Sampler 1

15.88271 34.33377

15.85795 36.00054

--

Sampler 2

15.4457 34.33439

15.41146 36.00106

--

Sampler 3

15.00808 34.33337

14.96436 36.00015

--

Sampler 4

14.56969 34.33588

14.52223 35.80754

--

14.51996 35.88467

14.51989 35.88689

--

14.51972 35.89294

14.51956 35.89835

--

14.51956 35.89837  
14.51949 35.90063

--

14.51939 35.90412  
14.51657 36.00109

--

Sampler 5

14.13068 34.33718  
14.0682 36.00028

--

Sampler 6

13.6911 34.33685  
13.57994 37.0029

--

Sampler 7

13.25098 34.33487  
13.12418 37.00429

--

Sampler 8

12.77295 35.00123  
12.66788 37.00388

--

Sampler 9

12.32776 35.00237  
12.21108 37.00164

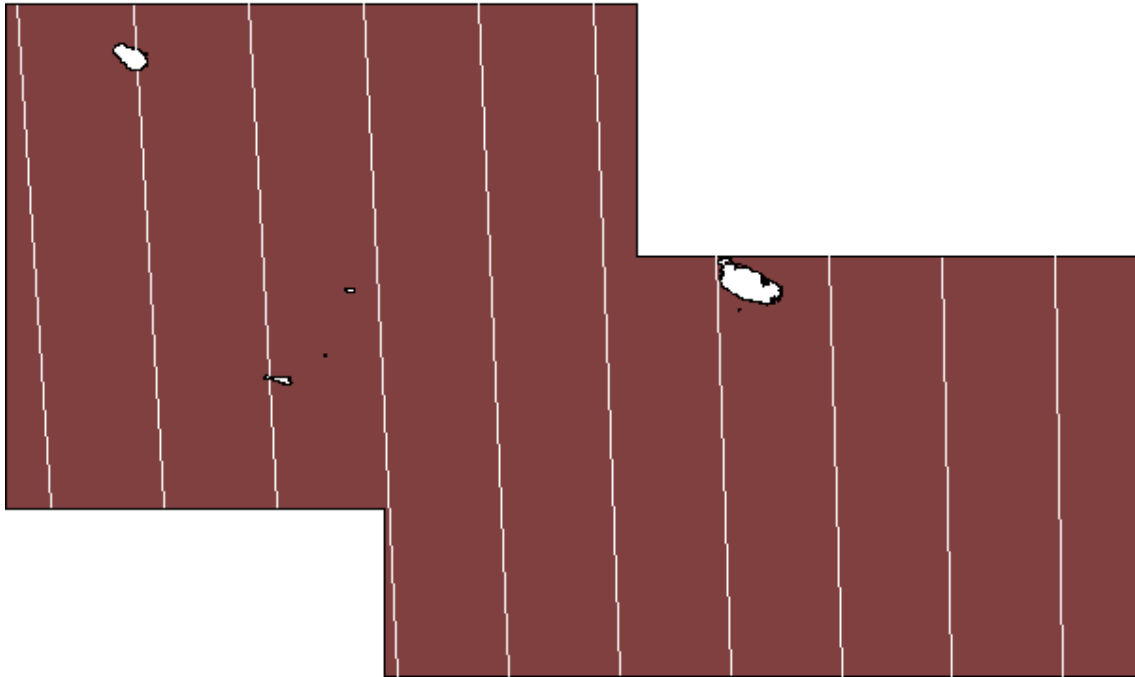
--

Sampler 10

11.88206 35.00182  
11.75366 37.00027

--

### Replica 3



Sample layer name: 4 Replicas - Replica 3

Type of sampler: Line

Number of samplers: 10

List of samplers:

x-coord y-coord

Sampler 1

15.68524 34.33426

15.6562 36.00099

--

Sampler 2

15.24795 34.33413

15.20943 36.00073

--

Sampler 3

14.81 34.33447

14.76202 36.00079

--

Sampler 4

14.37132 34.33667

14.31396 36.00094

--

Sampler 5

13.93205 34.33724

13.82943 37.00136

--

Sampler 6

13.49222 34.33616

13.37398 37.00375

--

Sampler 7

13.05186 34.33343

12.91798 37.00433

--

Sampler 8

12.57177 35.00195

12.54275 35.51202

--

12.54199 35.52551

12.46145 37.00309

--

Sampler 9

12.12635 35.00233

12.02017 36.73443

--

12.01481 36.82475

12.00444 37.00004

--

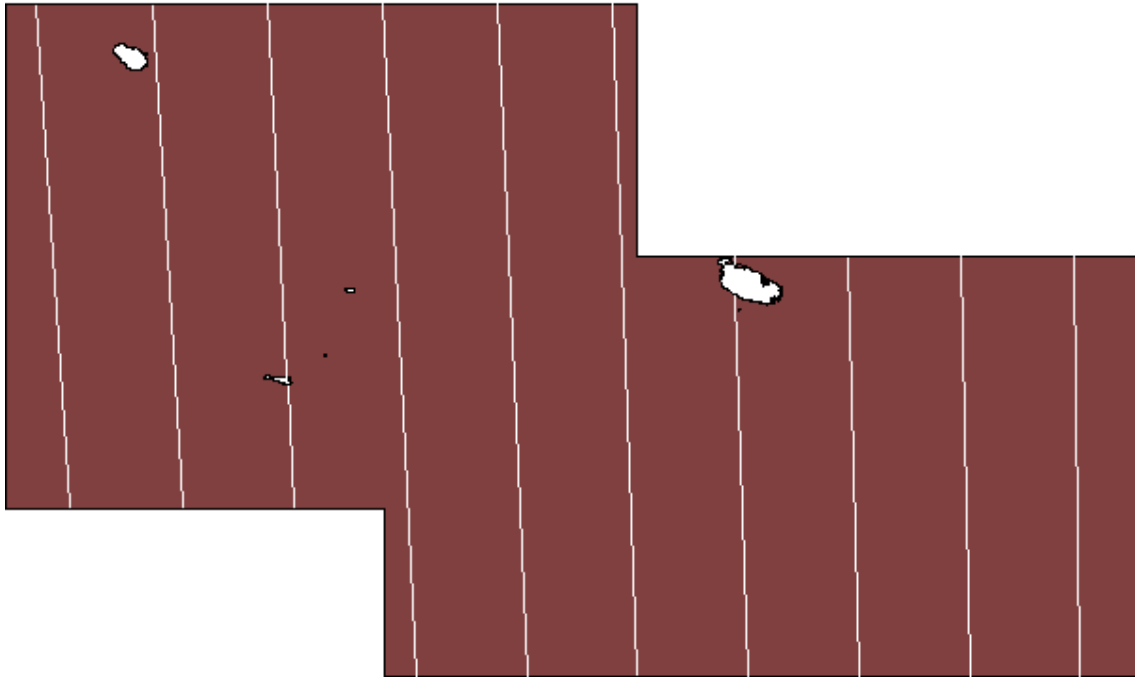
Sampler 10

11.68043 35.00101

11.54667 37.00001

--

#### Replica 4



Sample layer name: 4 Replicas - Replica 4

Type of sampler: Line

Number of samplers: 10

List of samplers:

x-coord y-coord

Sampler 1

15.75626 34.33412

15.72875 36.00087

--

Sampler 2

15.31907 34.33426

15.28209 36.00089

--

Sampler 3

14.88124 34.33395

14.83479 36.0006

--

Sampler 4

14.44266 34.33643

14.39164 35.84527

--

14.38848 35.94706

14.38836 35.95109

--

14.3878 35.96936

14.38683 36.00103

--

Sampler 5

14.00348 34.33726

13.9034 37.0008

--

Sampler 6

13.56374 34.33644

13.44805 37.00348

--

Sampler 7

13.12347 34.33399

12.99213 37.00436

--

Sampler 8

12.64412 35.00173

12.6168 35.48963

--

12.61528 35.51701

12.53569 37.00342

--

Sampler 9

12.19878 35.00238

12.07875 37.00066

--

Sampler 10

11.75294 35.00134

11.62111 37.0002

--



## Area G – Levantine Sea

### Replica 1



Sample layer name: 4 Replicas - Replica 1

Type of sampler: Line

Number of samplers: 14

List of samplers:

x-coord y-coord

Sampler 1

35.05316 35.00917

35.37697 36.24421

--

Sampler 2

34.66825 35.00879

35.09456 36.64785

--

Sampler 3

34.28172 35.0069

34.42344 35.58513

--

34.44342 35.66479

34.74203 36.80703

--

Sampler 4

33.92308 35.12846

33.92338 35.12973

--

33.92375 35.13132

33.92389 35.13189

--

33.9243 35.13366

33.97153 35.33182

--

34.0065 35.4768

34.29107 36.60554

--

Sampler 5

33.58805 35.36087  
33.81268 36.28726

--

Sampler 6

33.19571 35.35756  
33.37624 36.12525

--

Sampler 7

32.95057 36.00384  
32.97098 36.09099

--

Sampler 8

32.5532 36.00448  
32.57022 36.07914

--

Sampler 9

32.15446 36.00352  
32.22258 36.30787

--

Sampler 10

31.75516 36.00447  
31.87862 36.56627

--

Sampler 11

31.35513 36.00646  
31.50788 36.71762

--

Sampler 12

30.95384 36.00686  
31.12549 36.82646

--

Sampler 13

30.55134 36.00563  
30.72244 36.84702

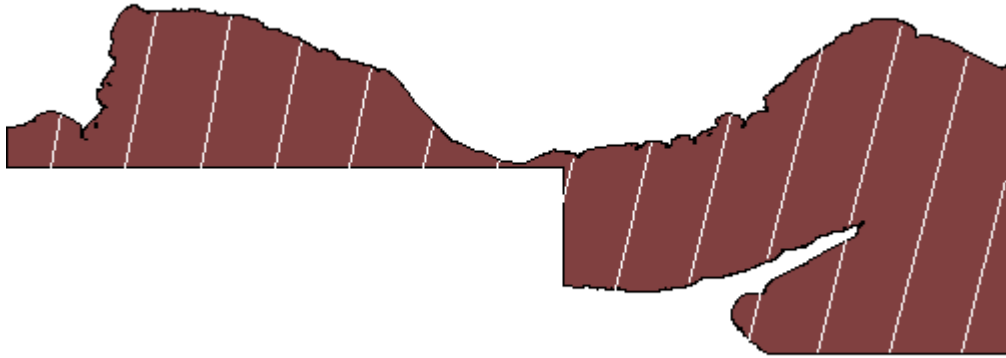
--

Sampler 14

30.14769 36.0028  
30.20556 36.3025

--

## Replica 2



Sample layer name: 4 Replicas - Replica 2

Type of sampler: Line

Number of samplers: 14

List of samplers:

x-coord y-coord

Sampler 1

35.13599 35.00906

35.37698 35.93366

--

Sampler 2

34.75145 35.009

35.16971 36.61148

--

Sampler 3

34.36526 35.00744

34.52257 35.64472

--

34.53654 35.69999

34.81858 36.77356

--

Sampler 4

33.9908 35.06064

34.06932 35.38859

--

34.10029 35.51591

34.39447 36.67266

--

Sampler 5

33.68011 35.39349

33.89952 36.2925

--

Sampler 6

33.27823 35.34858

33.46629 36.14368

--

Sampler 7

32.9762 35.74593  
33.05005 36.06268

--

Sampler 8

32.63906 36.00447  
32.64783 36.04276

--

Sampler 9

32.24061 36.00387  
32.29159 36.23092

--

Sampler 10

31.84131 36.00383  
31.96098 36.54552

--

Sampler 11

31.44156 36.00617  
31.58732 36.68148

--

Sampler 12

31.04053 36.0069  
31.21206 36.82088

--

Sampler 13

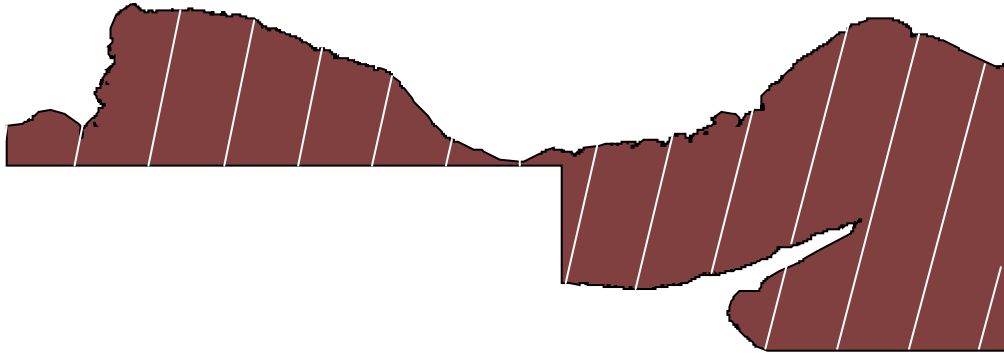
30.63829 36.00603  
30.80977 36.84385

--

Sampler 14

30.23489 36.00355  
30.29039 36.28917

### Replica 3



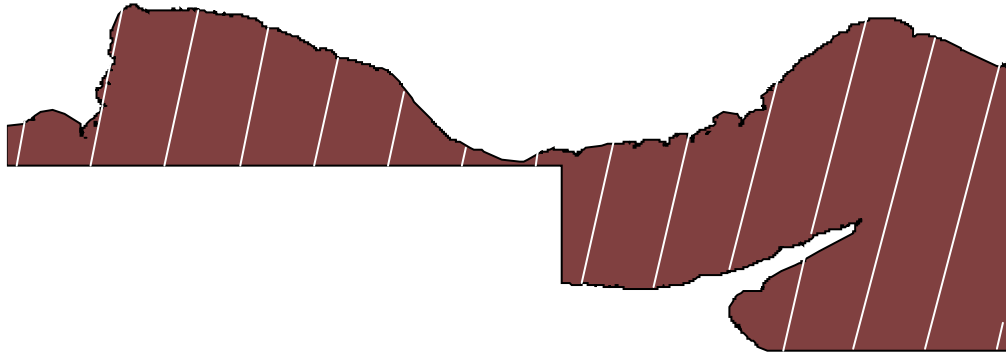
Sample layer name: 4 Replicas - Replica 3  
Type of sampler: Line  
Number of samplers: 15

#### List of samplers:

	x-coord	y-coord
Sampler 1		
	35.26317	35.00875
	35.37892	35.45692
	--	
Sampler 2		
	34.87918	35.00919
	35.28562	36.55796
	--	
Sampler 3		
	34.49353	35.00813
	34.93468	36.71732
	--	
Sampler 4		
	34.10629	35.00555
	34.2187	35.47093
	--	
	34.24687	35.58524
	34.55478	36.77953
	--	
Sampler 5		
	33.81573	35.41866
	34.03621	36.31337
	--	
	34.04812	36.3602
	34.05749	36.3969
	--	
Sampler 6		
	33.40586	35.33878
	33.60731	36.18263
	--	
Sampler 7		
	33.0204	35.36744
	33.19521	36.11928
	--	
Sampler 8		
	32.77092	36.00433
	32.77779	36.03408
	--	
Sampler 9		
	32.37292	36.00425
	32.40396	36.14169
	--	
Sampler 10		
	31.97361	36.00271
	32.08069	36.48403
	--	

```
Sampler 11
  31.5743 36.00557
  31.71149 36.63624
--
Sampler 12
  31.17369 36.00684
  31.34104 36.79406
--
Sampler 13
  30.77185 36.0065
  30.94604 36.84893
--
Sampler 14
  30.36882 36.00455
  30.41012 36.21549
--
Sampler 15
  29.99123 36.1415
  30.00638 36.22092
--
```

#### Replica 4



Sample layer name: 4 Replicas - Replica 4  
Type of sampler: Line  
Number of samplers: 15

#### List of samplers:

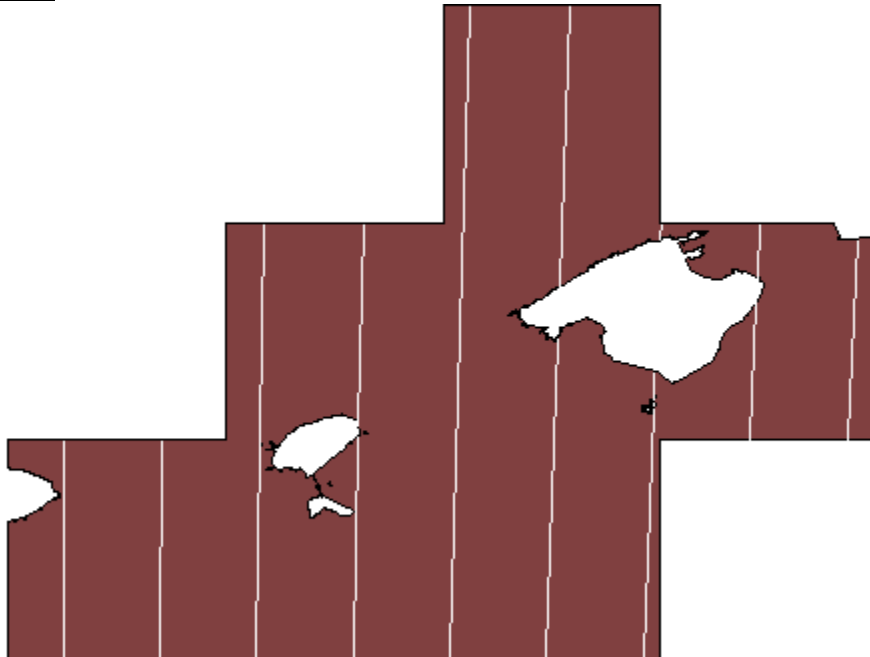
	x-coord	y-coord
Sampler 1		
	35.34324	35.00848
	35.38133	35.1568
--		
Sampler 2		
	34.95961	35.00922
	35.37122	36.56998
--		
Sampler 3		
	34.5743	35.00847
	35.01014	36.69075
--		
Sampler 4		
	34.18739	35.00621
	34.31225	35.51972
--		
	34.34185	35.63884
	34.64579	36.80881
--		
Sampler 5		
	33.90287	35.44141
	34.1669	36.49981
--		
Sampler 6		
	33.4896	35.34703
	33.68898	36.17778
--		
Sampler 7		
	33.10287	35.36916
	33.28091	36.13049
--		
Sampler 8		
	32.85397	36.00414
	32.87177	36.08063
--		
Sampler 9		
	32.45626	36.00439
	32.47879	36.10376
--		
Sampler 10		
	32.05719	36.00305
	32.14682	36.40476
--		
Sampler 11		
	31.6579	36.0051
	31.78565	36.58989

```
--
Sampler 12
  31.25756 36.0067
  31.41586 36.74811
--
Sampler 13
  30.85597 36.00671
  31.03123 36.84898
--
Sampler 14
  30.45319 36.00509
  30.51665 36.32576
--
  30.51822 36.33355
  30.54153 36.44939
--
  30.5422 36.45267
  30.56296 36.55495
--
  30.57085 36.59365
  30.62535 36.85777
--
Sampler 15
  30.04926 36.00186
  30.09511 36.24174
--
```



## Area A – Balearic Sea

### Replica Extra 1



Sample layer name: 4 replicas - Extra 1

Type of sampler: Line

Number of samplers: 9

List of samplers:

x-coord y-coord

Sampler 1

0.2537587 38.00296

0.2572843 39.00082

--

Sampler 2

0.6983374 38.00684

0.7080036 39.00089

--

Sampler 3

1.142927 38.00903

1.175436 40.00063

--

Sampler 4

1.587489 38.00954

1.609925 39.02368

--

1.610882 39.06579

1.632648 40.001

--

Sampler 5

2.031988 38.00837

2.121097 41.00046

--

Sampler 6

2.476387 38.00552

2.527689 39.4748

--

2.527791 39.47761

2.527833 39.47876

--

2.535932 39.70112

2.58513 41.00105

--

Sampler 7

2.920648 38.00098

2.967499 39.14785

--

2.968127 39.16281

2.968707 39.17658

--

2.968748 39.17756

2.968893 39.181

--

2.969288 39.19039

2.974808 39.32101

--

3.000786 39.92455

3.004089 40.00002

--

Sampler 8

3.411928 39.00104

3.442882 39.63462

--

3.448396 39.74541

3.461218 40.00068

--

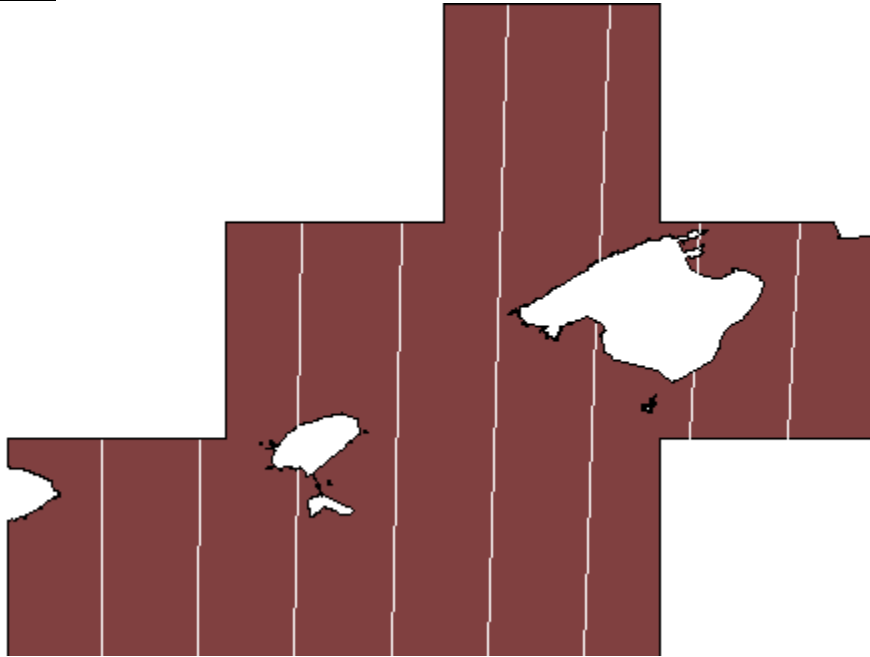
Sampler 9

3.862432 39.00051

3.914045 39.92657

--

## Replica Extra 2



Sample layer name: 4 replicas - Extra 2

Type of sampler: Line

Number of samplers: 8

List of samplers:

x-coord y-coord

Sampler 1

0.428079 38.00468

0.4340179 39.00105

--

Sampler 2

0.8726663 38.0079

0.8847275 39.00044

--

Sampler 3

1.317249 38.00943

1.332938 38.86747

--

1.336535 39.05914

1.354719 40.00099

--

Sampler 4

1.761791 38.00928

1.811909 40.00066

--

Sampler 5

2.206255 38.00745

2.303058 41.00092

--

Sampler 6

2.650604 38.00394  
2.708064 39.53878

--

2.719122 39.82112  
2.767058 41.00077

--

#### Sampler 7

3.138008 39.00051  
3.151937 39.31309

--

3.172488 39.7655  
3.175898 39.83958

--

3.177929 39.88358  
3.18044 39.93786

--

3.181134 39.95282  
3.183347 40.00049

--

#### Sampler 8

3.588592 39.00104  
3.640429 40.00045

--

## Area C – Southern Tyrrhenian Sea

### Replica Extra 1



Sample layer name: 4 Replicas - Extra 1  
Type of sampler: Line  
Number of samplers: 7

#### List of samplers:

x-coord y-coord

##### Sampler 1

15.94499 38.70297  
15.99846 39.16207  
--

##### Sampler 2

15.41841 38.25404  
15.61137 39.99388  
--

##### Sampler 3

14.93512 38.18301  
14.95444 38.38132  
--  
14.95943 38.43207  
14.96108 38.44879  
--  
14.96179 38.45599  
14.96394 38.47783  
--  
14.96502 38.48869  
15.12261 39.99507  
--

##### Sampler 4

14.44579 38.03794  
14.63362 39.99808  
--

##### Sampler 5

13.96998 38.03805  
14.14404 39.99971  
--

##### Sampler 6

13.49915 38.10967  
13.65385 39.99918  
--

##### Sampler 7

13.01907 38.06736  
13.1631 39.99651

## Replica Extra 2



Sample layer name: 4 Replicas - Extra 2  
Type of sampler: Line  
Number of samplers: 6

List of samplers:

x-coord y-coord

Sampler 1

15.64337 38.2608  
15.64353 38.26235  
--  
15.64456 38.27193  
15.80415 39.68312  
--

Sampler 2

15.15586 38.14821  
15.21963 38.77336  
--  
15.22363 38.81165  
15.35286 39.99444  
--

Sampler 3

14.67545 38.0997  
14.86399 39.99658  
--

Sampler 4

14.19261 38.01991  
14.37472 39.99921  
--

Sampler 5

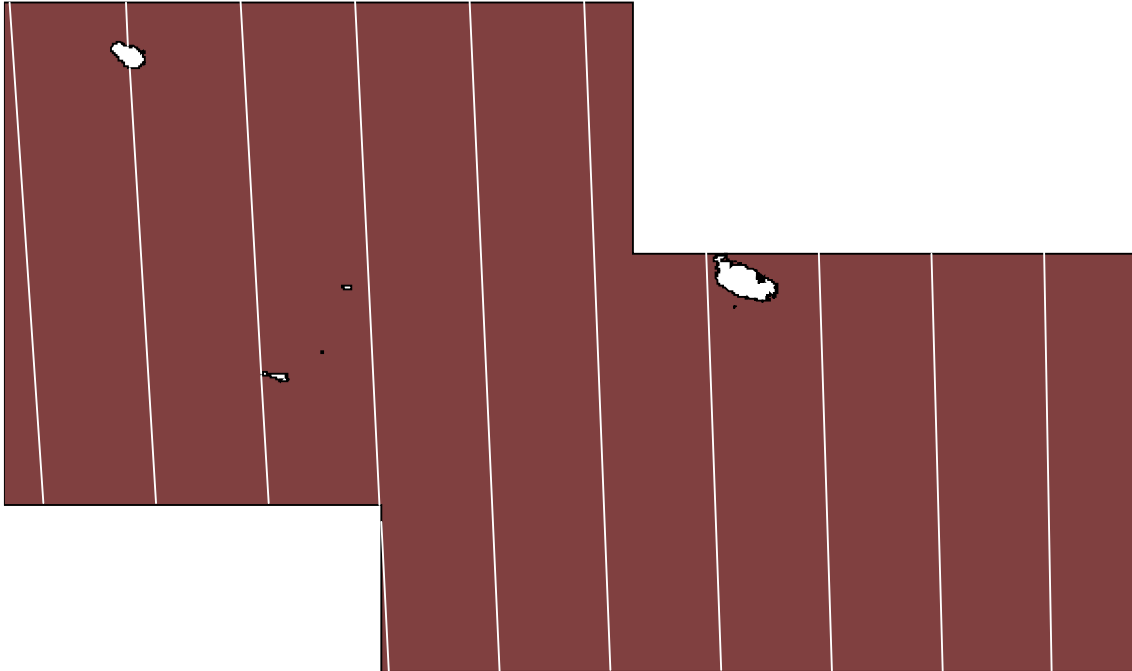
13.71512 38.00005  
13.88481 39.9997  
--

Sampler 6

13.2539 38.20773  
13.39431 39.99804  
--

## Area E - Central-Southern Mediterranean Sea

### Replica Extra 1



Sample layer name: 4 Replicas - Extra 1  
Type of sampler: Line  
Number of samplers: 10

#### List of samplers:

x-coord y-coord

##### Sampler 1

15.66508 34.33429  
15.6356 36.00102

--

##### Sampler 2

15.22777 34.33409  
15.18881 36.00067

--

##### Sampler 3

14.78977 34.33461  
14.74136 36.00084

--

##### Sampler 4

14.35107 34.33673  
14.29328 36.0009

--

##### Sampler 5

13.91177 34.33722  
13.80844 37.00151

--

##### Sampler 6

13.47191 34.33607  
13.35296 37.00381

--

##### Sampler 7

13.03153 34.33327  
12.99992 34.92826

--

12.99616 35.00003  
12.89693 37.00431

--

##### Sampler 8

```
12.55124 35.00201
12.5219 35.5153
--
12.52169 35.51891
12.44038 37.00299
--
Sampler 9
12.10579 35.0023
11.99904 36.73619
--
11.99391 36.82214
11.98334 37.00004
--
Sampler 10
11.65985 35.00091
11.52555 37.00005
--
```



**Replica Extra 2**



Sample layer name: 4 Replicas - Extra 2  
Type of sampler: Line  
Number of samplers: 11

List of samplers:  
x-coord y-coord

Sampler 1  
15.94596 34.33355  
15.92257 36.00032  
--  
Sampler 2  
15.50904 34.3344  
15.47618 36.00109  
--  
Sampler 3  
15.07151 34.33361  
15.02917 36.00013  
--  
Sampler 4  
14.63324 34.33555  
14.58148 36.00106  
--  
Sampler 5  
14.19432 34.3371  
14.13319 36.0005  
--  
Sampler 6  
13.75482 34.337  
13.64591 37.00254  
--  
Sampler 7  
13.31477 34.33526  
13.19023 37.0042  
--  
Sampler 8  
12.8374 35.00093  
12.73401 37.00405  
--  
Sampler 9  
12.39228 35.00231

```
12.27729 37.00208
--
Sampler 10
11.94665 35.002
11.81998 37.00025
--
Sampler 11
11.50055 35
11.49997 35.00811
--
```

## Area G – Levantine Sea

### Replica Extra 1



Sample layer name: 4 Replicas - Extra 1

Type of sampler: Line

Number of samplers: 14

List of samplers:

x-coord y-coord

Sampler 1

35.08346 35.00914

35.37686 36.13063

--

Sampler 2

34.69868 35.00888

35.12188 36.63389

--

Sampler 3

34.31227 35.00711

34.45967 35.60694

--

34.47919 35.68451

34.77073 36.79737

--

Sampler 4

33.94637 35.0974

34.00179 35.3298

--

34.04132 35.4933

34.32967 36.6332

--

Sampler 5

33.61974 35.36445

33.84751 36.30143

--

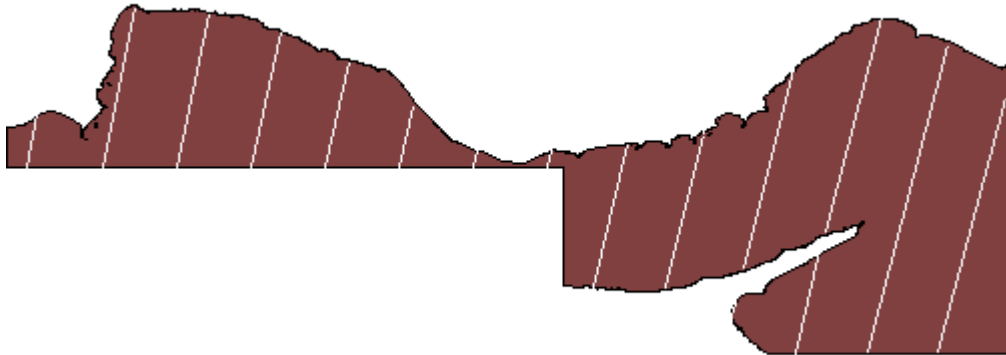
Sampler 6

33.22546 35.35241

33.41179 36.14282

--  
Sampler 7  
32.97625 35.97973  
33.00125 36.08635  
--  
Sampler 8  
32.5846 36.00449  
32.59861 36.06584  
--  
Sampler 9  
32.18596 36.00366  
32.24804 36.28065  
--  
Sampler 10  
31.78666 36.00425  
31.90877 36.5588  
--  
Sampler 11  
31.38674 36.00636  
31.53747 36.70679  
--  
Sampler 12  
30.98555 36.00688  
31.15709 36.82413  
--  
31.15742 36.82568  
31.15817 36.82912  
--  
31.15863 36.83128  
31.15887 36.83235  
--  
Sampler 13  
30.58314 36.00579  
30.75339 36.84117  
--  
Sampler 14  
30.17958 36.00308  
30.23771 36.30338  
--

## Replica Extra 2



Sample layer name: 4 Replicas - Extra 2

Type of sampler: Line

Number of samplers: 14

List of samplers:

x-coord y-coord

Sampler 1

35.01573 35.0092

35.3773 36.38455

--

Sampler 2

34.63066 35.00867

35.06081 36.66509

--

Sampler 3

34.24397 35.00664

34.37872 35.55817

--

34.40452 35.66141

34.70497 36.81311

--

Sampler 4

33.89327 35.16256

33.93042 35.31874

--

33.96522 35.46347

34.24535 36.5787

--

Sampler 5

33.54853 35.35485

33.74638 36.17612

--

33.74908 36.18698

33.75651 36.21692

--

Sampler 6

33.15715 35.35604

33.34059 36.1377

--

Sampler 7

32.91191 36.00397

32.93396 36.09832

--

Sampler 8

32.51441 36.00446

32.53526 36.09604

--

Sampler 9

32.11553 36.00335

32.19111 36.34148

--

Sampler 10

31.71624 36.00473

31.84232 36.57972

--

Sampler 11

31.31609 36.00657

31.47147 36.73167

--

Sampler 12

30.91468 36.00681

31.0869 36.83142

--

Sampler 13

30.51206 36.00543

30.68758 36.87041

--

Sampler 14

30.1083 36.00243

30.16454 36.29469

--