

# France Country Insights

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## Congratulations! This country has available data.

This page includes country-specific insights and more detailed analysis, including carbon stocks, emissions factors, and ecosystem wetland area for mangrove, marsh, and seagrass ecosystems. This report details information for the selected country, **France**.

Please explore the rest of the dashboard for more exciting visualizations, map features, and data.

Resources referenced to calculate estimates for **France** are listed below under 'References' at the bottom of this document.

## Total Carbon Stock Estimates

Total Carbon stock estimates were calculated for each country and habitat At this time total Carbon stock estimates do not include seagrass

We estimate that **France** contains between c(23725886.02, 10983497.5, 10967447.24, 970001.19, 484334.55, 256920.83, 224586.51, 88353.57, 7904.15, 6837.42, 6821.28, 1334.83, 746.58) to c(13638427.29, 7849134.91, 5381617.88, 970001.19, 346437.51, 183771.76, 160643.49, 50788.57, 5653.72, 4890.71, 3921.1, 954.78, 534.02) metric tonnes of soil C to a depth of 1 m, with a mean estimate of c(18682156.65, 9416316.21, 8174532.56, 970001.19, 415386.03, 220346.3, 192615, 69571.07, 6778.93, 5864.06, 5371.19, 1144.8, 640.3) metric tonnes C.

country	territory	habitat	total_stocks	total_stocks_lower	total_stocks_upper	total_stocks_se
France	France	total	1.868216e+07	2.372589e+07	1.363843e+07	2.573331e+06
France	New Caledonia	total	9.416316e+06	1.098350e+07	7.849135e+06	7.995823e+05
France	French Guiana	total	8.174533e+06	1.096745e+07	5.381618e+06	1.424956e+06
France	Guadeloupe	total	9.700012e+05	9.700012e+05	9.700012e+05	0.000000e+00
France	Martinique	total	4.153860e+05	4.843345e+05	3.464375e+05	3.517781e+04
France	French Southern Territories	total	2.203463e+05	2.569208e+05	1.837718e+05	1.866048e+04
France	Mayotte	total	1.926150e+05	2.245865e+05	1.606435e+05	1.631199e+04
France	Saint Pierre and Miquelon	total	6.957107e+04	8.835357e+04	5.078857e+04	9.582909e+03
France	Wallis and Futuna	total	6.778935e+03	7.904147e+03	5.653722e+03	5.740879e+02
France	Saint Martin	total	5.864062e+03	6.837417e+03	4.890706e+03	4.966100e+02
France	Réunion	total	5.371187e+03	6.821277e+03	3.921096e+03	7.398419e+02
France	Saint Barthelemy	total	1.144804e+03	1.334826e+03	9.547816e+02	9.695003e+01
France	French Polynesia	total	6.403008e+02	7.465822e+02	5.340195e+02	5.422518e+01

This total estimate includes total mangrove carbon stocks, from c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA) to c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA) metric tonnes of soil C to a depth of 1 m, with a mean estimate of c(1144.8, 5864.06, 0, 0, 220346.3, 6778.93, 640.3, 415386.03, 970001.19, 8037508.81, 9375937.58, 192615, 0)

country	territory	habitat	total_stocks	total_stocks_lower	total_stocks_upper	total_stocks_se
France	Saint Barthelemy	mangrove	1144.8036	NA	NA	9.896983e+01
France	Saint Martin	mangrove	5864.0617	NA	NA	5.069561e+02
France	Réunion	mangrove	0.0000	NA	NA	NA
France	Saint Pierre and Miquelon	mangrove	0.0000	NA	NA	NA
France	French Southern Territories	mangrove	220346.2983	NA	NA	1.904924e+04
France	Wallis and Futuna	mangrove	6778.9348	NA	NA	5.860481e+02
France	French Polynesia	mangrove	640.3008	NA	NA	5.535487e+01
France	Martinique	mangrove	415386.0293	NA	NA	3.591069e+04
France	Guadeloupe	mangrove	970001.1885	NA	NA	NA
France	French Guiana	mangrove	8037508.8130	NA	NA	1.435376e+06
France	New Caledonia	mangrove	9375937.5764	NA	NA	8.105625e+05
France	Mayotte	mangrove	192614.9962	NA	NA	1.665183e+04
France	France	mangrove	0.0000	NA	NA	NA

This total estimate also includes total tidal marsh carbon stocks, ranging from c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA) to c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA)metric tonnes of soil C to a depth of 1 m, with a mean estimate of c(0, 0, 5371.19, 69571.07, 0, 0, 0, 0, 0, 137023.75, 40378.63, 0, 18682156.65)

country	territory	habitat	total_stocks	total_stocks_lower	total_stocks_upper	total_stocks_se
France	Saint Barthelemy	marsh	0.000	NA	NA	NA
France	Saint Martin	marsh	0.000	NA	NA	NA
France	Réunion	marsh	5371.187	NA	NA	755.2553
France	Saint Pierre and Miquelon	marsh	69571.070	NA	NA	9782.5533
France	French Southern Territories	marsh	0.000	NA	NA	NA
France	Wallis and Futuna	marsh	0.000	NA	NA	NA
France	French Polynesia	marsh	0.000	NA	NA	NA
France	Martinique	marsh	0.000	NA	NA	NA
France	Guadeloupe	marsh	0.000	NA	NA	NA
France	French Guiana	marsh	137023.747	NA	NA	19267.2342
France	New Caledonia	marsh	40378.632	NA	NA	5677.7353
France	Mayotte	marsh	0.000	NA	NA	NA
France	France	marsh	18682156.654	NA	NA	2626942.3790

Seagrass carbon stocks were not included in the total value due to lack of a global, transparent, and independently assessed seagrass habitat map, however, best available areas and stocks for **France** are explored in the following ‘Wetland Areas and Activities’ section.

## Wetland Areas and Activities

We estimate mangrove area in **France** to be c(2.60417164226665, 13.3394259761183, 0, 0, 501.238441599674, 15.4205573207655, 1.45654084577461, 944.910114903672, 2634.83923931466, 76979.2442609689, 21328.1565272673, 438.155945028703, 0) to c(0, 0, 23.8119256877028, 308.42741014011, 0, 0, 0, 0, 607.463409914716, 179.009421556742, 0, 82823.0640425562) hectares, with a mean estimate of c(2.96581248168945, 15.1918696204331, 0, 0, 570.845332262729, 17.5620072940841, 1.65881040649414, 1076.12960965074,

3000.73888232764, 87669.3378250164, 24289.9937213581, 499.002580936447, 0) hectares according to Global Mangrove Watch Bunting et al. (2018).

We estimate tidal marsh area in **France** to be c(0, 0, 12.7583803910525, 165.254766590628, 0, 0, 0, 0, 0, 325.477634987761, 95.9128767558122, 0, 44376.4259164114) to c(0, 0, 23.8119256877028, 308.42741014011, 0, 0, 0, 0, 0, 607.463409914716, 179.009421556742, 0, 82823.0640425562) hectares, with a mean estimate of hectares according to Worthington et al. (2024).

We estimate seagrass area to be **France** to be a mean of c(NA, NA, NA, NA, NA, 2430, 2870, 4100, 8200, NA, 93600, 127526, 103897) hectares, according to McKenzie et al. (2020), aggregating data from multiple sources.

McKenzie et al. (2020) classifies seagrass area estimates as either high or medium to low confidence. seagrass\_area\_high\_confidence % of the estimated seagrass area of **France** is considered high to medium confidence, while seagrass\_area\_low\_confidence % of the estimated seagrass area is categorized as low confidence.

## Calculated Stocks and Emissions Factors

This section of the report details whether data is available to estimate Tier I, Tier II, or Tier III value estimates for tidal marsh, mangrove, and seagrass ecosystems in **France**.

If data for the selected country is available in the Coastal Carbon Atlas, we have applied a Tier II emission factor based on a simple average of country specific data queried from the Atlas.

Data from **France** includes 0 soil profiles from 0 watersheds. This data comes from 0 different habitat types.

If there is not yet any country specific information in the Coastal Carbon Atlas, we instead applied IPCC Tier I estimate. IPCC Tier I estimates for mangrove, marsh, and seagrass ecosystems are listed below.

**SOURCE**

The table in this section also details whether the calculated Tier II value is significantly different from the estimated Tier I values. This is observed in the “Overlap” column.

Table 4: IPCC Tier I Value Estimates

Habitat	Mean	Lower_CI	Upper_CI
mangrove	386	351	424
marsh	255	254	297
seagrass	108	84	139

Table 5: Availability of Tier I and Tier II Data

Country	Territory	Habitat	Tier	Overlap
France	Saint Barthelemy	mangrove	Tier I	NA
France	Saint Barthelemy	marsh	Tier I	NA
France	Saint Barthelemy	seagrass	Tier I	NA
France	Saint Martin	mangrove	Tier I	NA
France	Saint Martin	marsh	Tier I	NA
France	Saint Martin	seagrass	Tier I	NA
France	Réunion	mangrove	Tier I	NA
France	Réunion	marsh	Tier I	NA
France	Réunion	seagrass	Tier I	NA
France	Saint Pierre and Miquelon	mangrove	Tier I	NA

Country	Territory	Habitat	Tier	Overlap
France	Saint Pierre and Miquelon	marsh	Tier I	NA
France	Saint Pierre and Miquelon	seagrass	Tier I	NA
France	French Southern Territories	mangrove	Tier I	NA
France	French Southern Territories	marsh	Tier I	NA
France	French Southern Territories	seagrass	Tier I	NA
France	Wallis and Futuna	mangrove	Tier I	NA
France	Wallis and Futuna	marsh	Tier I	NA
France	Wallis and Futuna	seagrass	Tier I	NA
France	French Polynesia	mangrove	Tier I	NA
France	French Polynesia	marsh	Tier I	NA
France	French Polynesia	seagrass	Tier I	NA
France	Martinique	mangrove	Tier I	NA
France	Martinique	marsh	Tier I	NA
France	Martinique	seagrass	Tier I	NA
France	Guadeloupe	mangrove	Tier II	Country-specific average overlaps Tier I
France	Guadeloupe	marsh	Tier I	NA
France	Guadeloupe	seagrass	Tier I	NA
France	French Guiana	mangrove	Tier II	Country-specific average is significantly less than Tier I
France	French Guiana	marsh	Tier I	NA
France	French Guiana	seagrass	Tier I	NA
France	New Caledonia	mangrove	Tier I	NA
France	New Caledonia	marsh	Tier I	NA
France	New Caledonia	seagrass	Tier I	NA
France	Mayotte	mangrove	Tier I	NA
France	Mayotte	marsh	Tier I	NA
France	Mayotte	seagrass	Tier I	NA
France	France	mangrove	Tier I	NA
France	France	marsh	Tier I	NA
France	France	seagrass	Tier I	NA

## Tier I Carbon Stocks

This table includes Tier I Carbon Stocks included for **France**.

country	territory	habitat	stock_MgHa	stock_MgHa_low	stock_MgHa_upper	tierCI	carbon_pool
France	Saint Barthelemy	mangrove	386	351	424	TierI	soil
France	Saint Barthelemy	marsh	255	254	297	TierI	soil
France	Saint Barthelemy	seagrass	108	84	139	TierI	soil
France	Saint Martin	mangrove	386	351	424	TierI	soil
France	Saint Martin	marsh	255	254	297	TierI	soil
France	Saint Martin	seagrass	108	84	139	TierI	soil
France	Réunion	mangrove	386	351	424	TierI	soil
France	Réunion	marsh	255	254	297	TierI	soil
France	Réunion	seagrass	108	84	139	TierI	soil

country	territory	habitat	stock_MgHa	stock_MgHa_lowerCI	stock_MgHa_upperCI	carbon_pool
France	Saint Pierre and Miquelon	mangrove	386	351	424	TierI soil
France	Saint Pierre and Miquelon	marsh	255	254	297	TierI soil
France	Saint Pierre and Miquelon	seagrass	108	84	139	TierI soil
France	French Southern Territories	mangrove	386	351	424	TierI soil
France	French Southern Territories	marsh	255	254	297	TierI soil
France	French Southern Territories	seagrass	108	84	139	TierI soil
France	Wallis and Futuna	mangrove	386	351	424	TierI soil
France	Wallis and Futuna	marsh	255	254	297	TierI soil
France	Wallis and Futuna	seagrass	108	84	139	TierI soil
France	French Polynesia	mangrove	386	351	424	TierI soil
France	French Polynesia	marsh	255	254	297	TierI soil
France	French Polynesia	seagrass	108	84	139	TierI soil
France	Martinique	mangrove	386	351	424	TierI soil
France	Martinique	marsh	255	254	297	TierI soil
France	Martinique	seagrass	108	84	139	TierI soil
France	Guadeloupe	marsh	255	254	297	TierI soil
France	Guadeloupe	seagrass	108	84	139	TierI soil
France	French Guiana	marsh	255	254	297	TierI soil
France	French Guiana	seagrass	108	84	139	TierI soil
France	New Caledonia	mangrove	386	351	424	TierI soil
France	New Caledonia	marsh	255	254	297	TierI soil
France	New Caledonia	seagrass	108	84	139	TierI soil
France	Mayotte	mangrove	386	351	424	TierI soil
France	Mayotte	marsh	255	254	297	TierI soil
France	Mayotte	seagrass	108	84	139	TierI soil
France	France	mangrove	386	351	424	TierI soil
France	France	marsh	255	254	297	TierI soil
France	France	seagrass	108	84	139	TierI soil

## Tier II Carbon Stocks

This table includes Tier II Carbon Stock estimates for **France**. Estimates in this table were derived from data queried from the Coastal Carbon Atlas. SOURCE

country	territory	habitat	tier	carbon_pool	stock_MgHa	stock_MgHa_lowerCI	stock_MgHa_upperCI
France	Guadeloupe	mangrove	TierII	soil	323.25411	61.28448	NA
France	French Guiana	mangrove	TierII	soil	91.67982	14.99384	121.0672

## Tier III Carbon Stocks

Tier III carbon stocks were estimated, when available, from remote sensing data from Maxwell et al 2021 and Sanderman et al 2018. The table below details whether estimated values are available for **France**, and any overlap with associated Tier I or Tier II values.

If there are no Tier III estimates associated with the selected country, please refer to Tier I and Tier II tables.

country	territory	habitat	stock_Mg	d_k_Mg	d_k_low_Mg	HLLug	gltierIII	overlaps_tierIII	tierIII_gltierIII	overlaps_tierI
France	Guadeloupe	mangrove	504.5886	95.7646	613.4127	greater than	Remote-sensing estimate overlaps country-specific average	greater than	Remote-sensing estimate overlaps Tier I	Tier III
France	French Guiana	mangrove	274.4329	81.7085	367.1574	greater than	Remote-sensing estimate is significantly greater than country-specific average	less than	Remote-sensing estimate overlaps Tier I	Tier III

## References

- Bunting, Pete, Ake Rosenqvist, Richard M. Lucas, Lisa-Maria Rebelo, Lammert Hilarides, Nathan Thomas, Andy Hardy, Takuya Itoh, Masanobu Shimada, and C. Max Finlayson. 2018. "The Global Mangrove Watch—a New 2010 Global Baseline of Mangrove Extent." *Remote Sensing* 10 (10): 1669. <https://doi.org/10.3390/rs10101669>.
- McKenzie, Len J, Lina M Nordlund, Benjamin L Jones, Leanne C Cullen-Unsworth, Chris Roelfsema, and Richard K F Unsworth. 2020. "The Global Distribution of Seagrass Meadows." *Environmental Research Letters* 15 (7): 074041. <https://doi.org/10.1088/1748-9326/ab7d06>.
- Worthington, Thomas A., Mark Spalding, Emily Landis, Tania L. Maxwell, Alejandro Navarro, Lindsey S. Smart, and Nicholas J. Murray. 2024. "The Distribution of Global Tidal Marshes from Earth Observation Data." *Global Ecology and Biogeography* 33 (8). <https://doi.org/10.1111/geb.13852>.