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MONITORING OF REFORESTATION USING SATELLITE IMAGES



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THE MAIN GOAL OF THE PROJECT



The purpose of the work is to analyze reforestation work on 17 sites in Okhvatsky forestry, Tver region, Russia in the period 2016-2019 years.



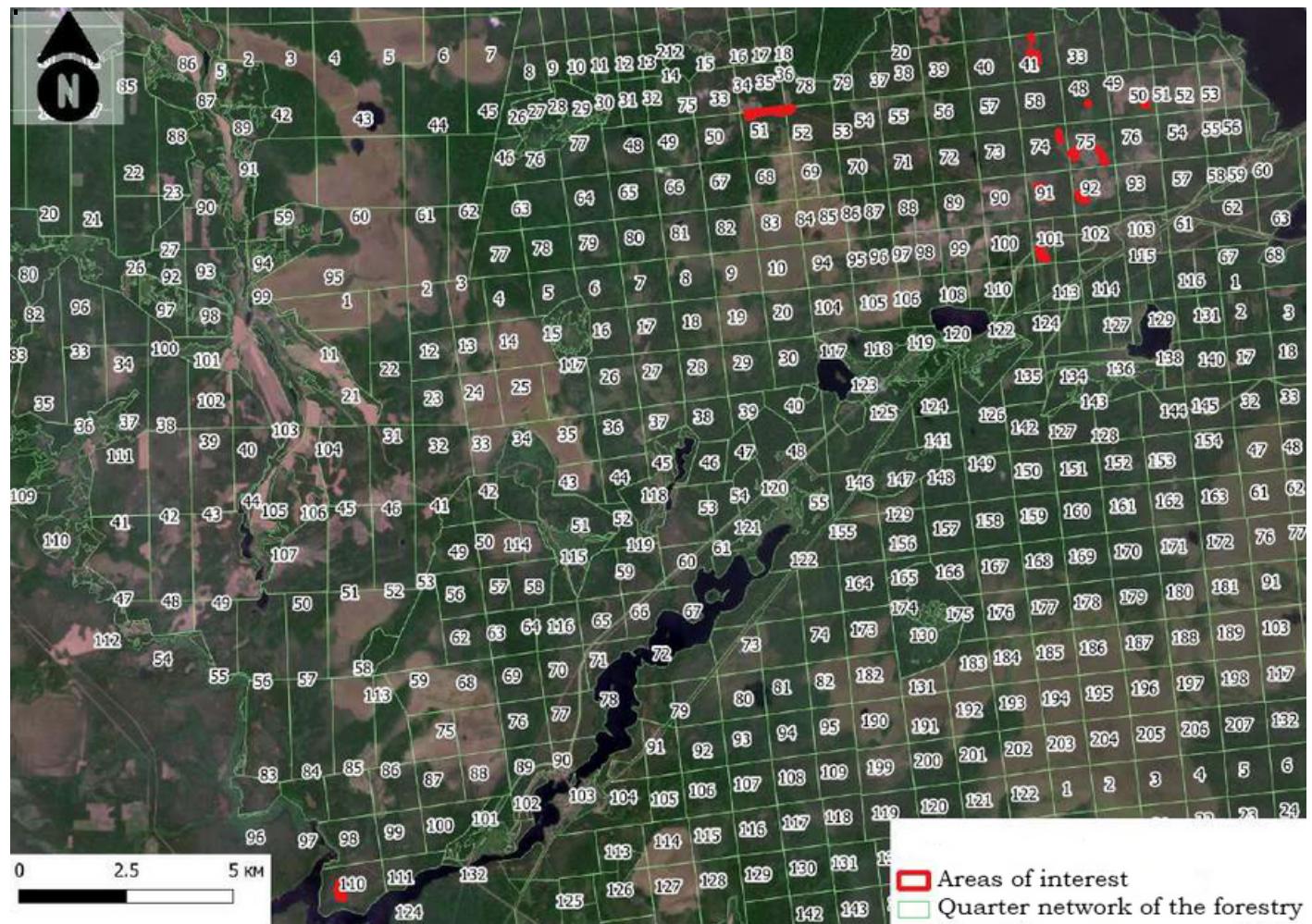
The total analyzed area is 0.5 square kilometres.



The source of data is WorldView and GeoEye satellite images and administrative schemas of forestry quarters from the forestry. ArcGIS Desktop and Tableau were used to prepare the report.

ANALYZED AREA

The following map shows the location of the 17 analyzed forest parcels in Okhvatsky forestry, Tver region, Russia.

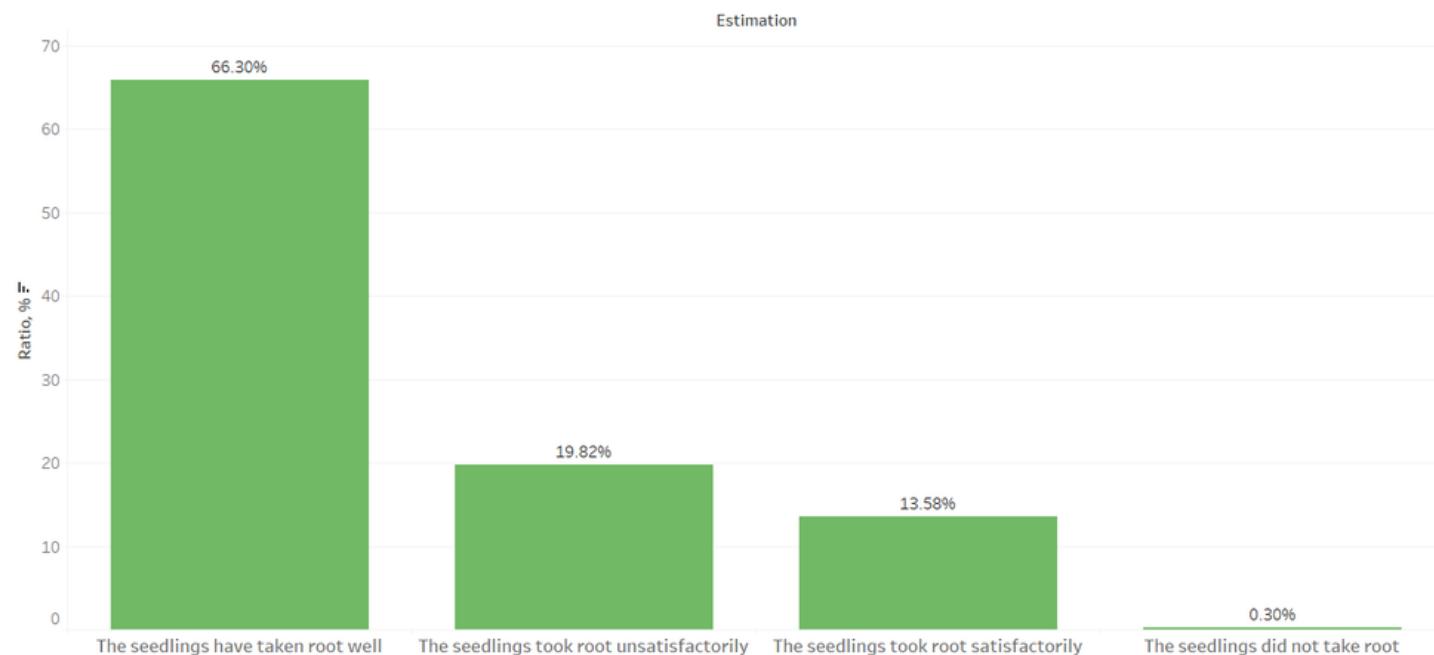


EVALUATION OF REFORESTATION WORK

Forest parcels were evaluated with using satellite images in the visible and infrared ranges according to the criterion the survival rate of seedlings.

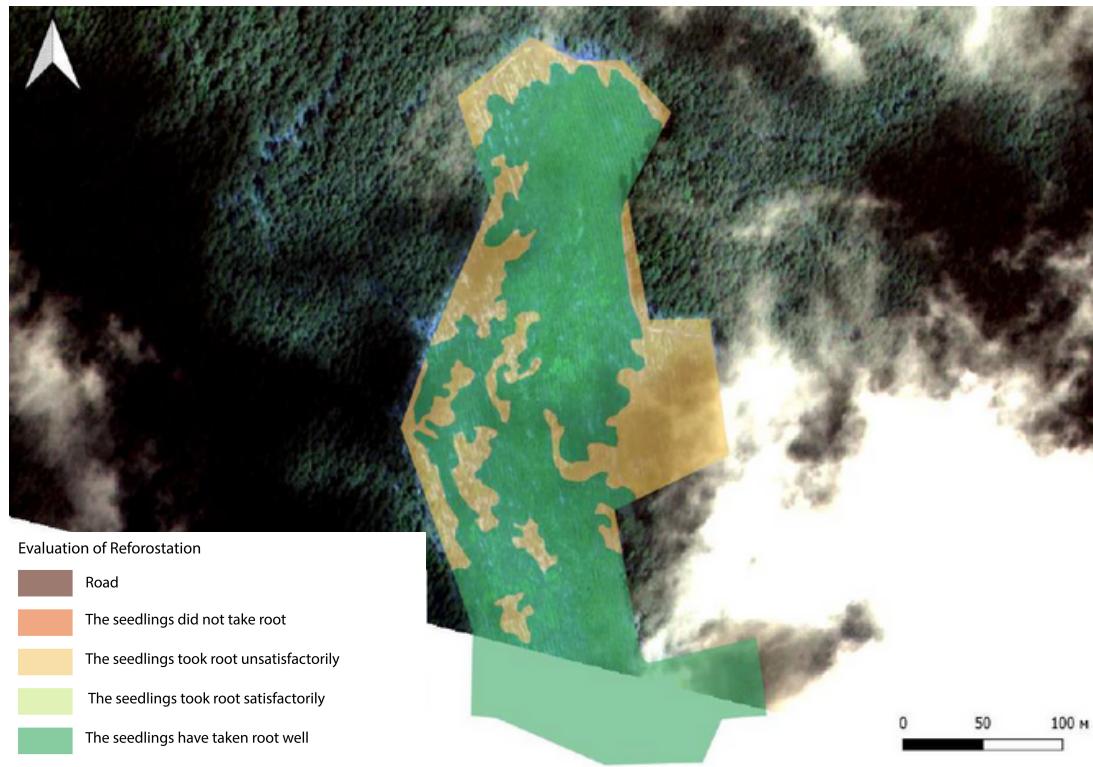
Evaluation of reforestation

Most of the seedlings successfully took root (66.3%), an insignificant part of the seedlings (0.3%) died. 19.8% of seedlings did not take root satisfactorily due to waterlogging of the soil, since the analyzed territory is located in wetlands.



APPENDIX 1.

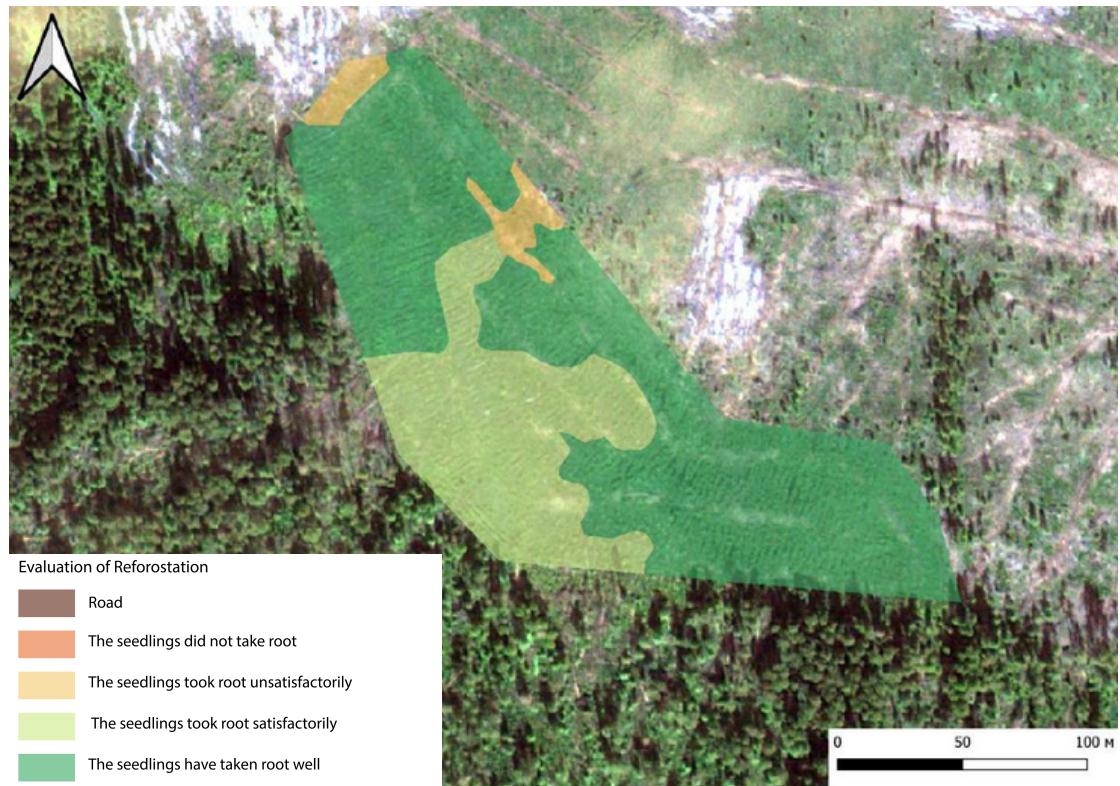
ESTIMATION OF EACH FOREST PARCEL

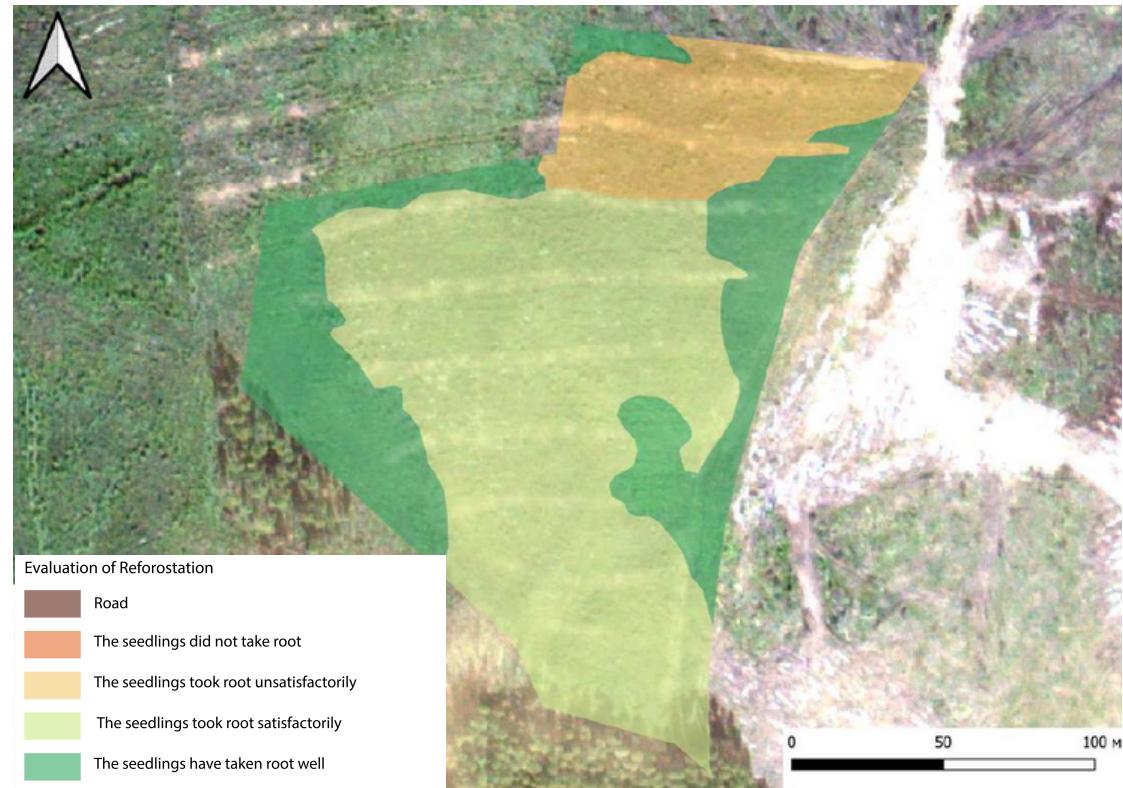


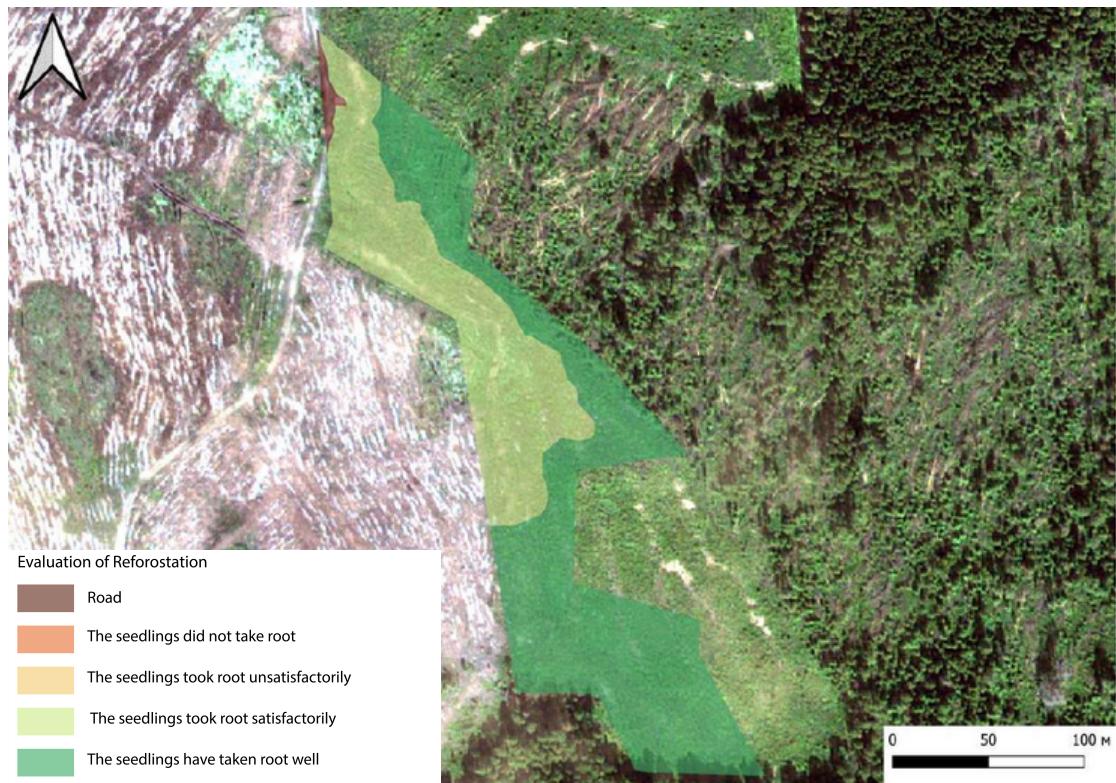
id	Estimation	Ratio, %
1	The seedlings have taken root well	71.5
	The seedlings took root unsatisfactorily	28.5



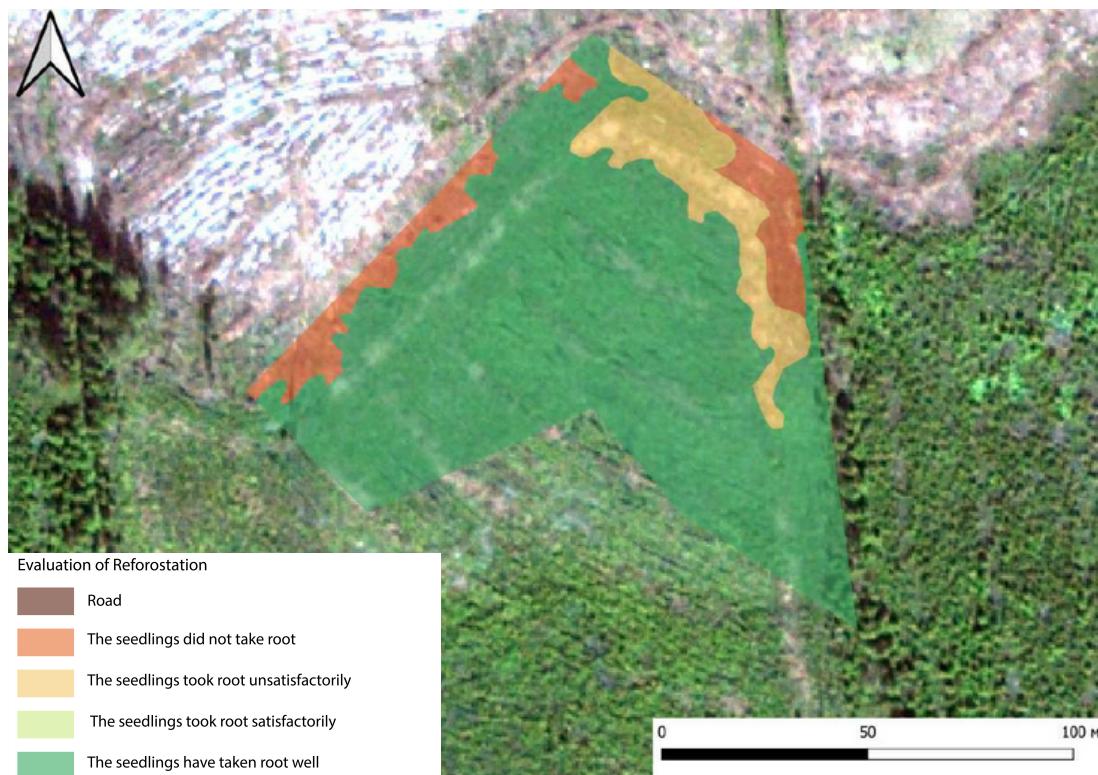
id	Estimation	Ratio, %
2	The seedlings have taken root well	51.9
	The seedlings took root satisfactorily	38.7
	The seedlings took root unsatisfactorily	9.4

















id	Estimation	Ratio ,%
17	The seedlings have taken root well	97.6
	The seedlings took root unsatisfactorily	2.3
	Road	0.1

APPENDIX 2.

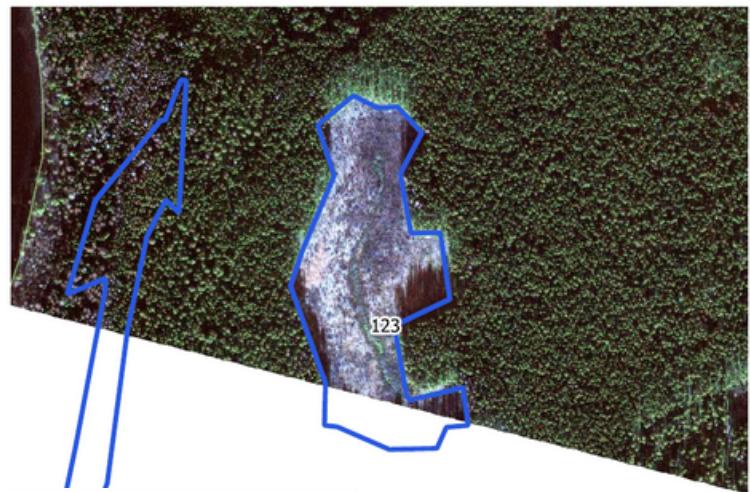
MONITORING OF

REFORESTATION USING

SPACE IMAGES

The purpose of this application is to show the growth progress of new seedlings using satellite imagery.

Shooting date: 2017-10-17



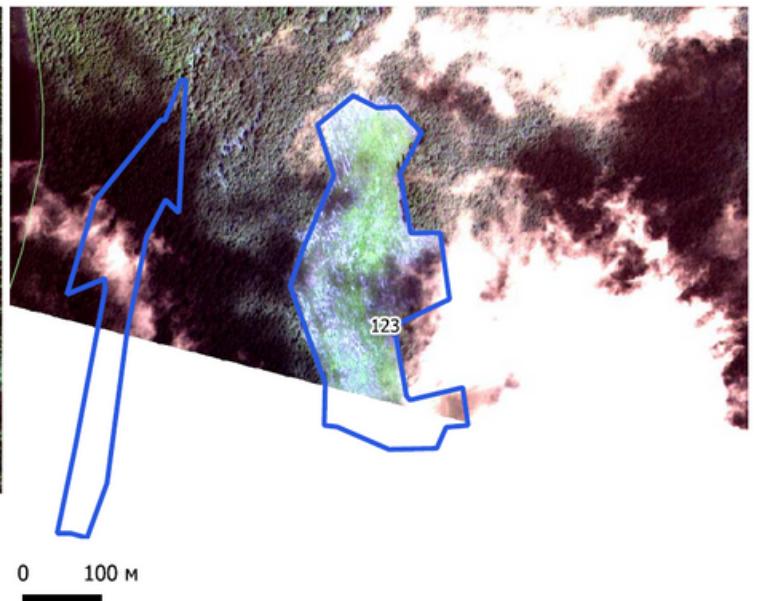
Year of planting forest crops

2016

2017

Quarter network of the forestry

Shooting date: 2019-06-10



Shooting date: 2016-05-14



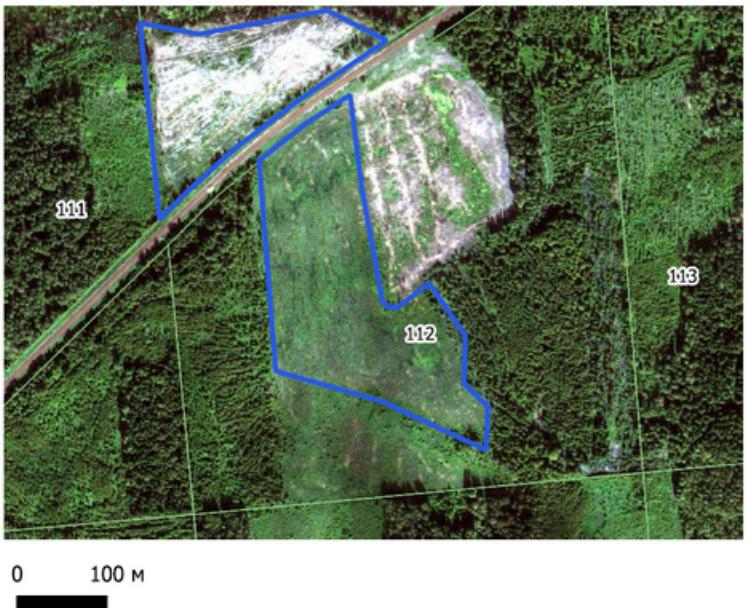
Year of planting forest crops

2016

2017

Quarter network of the forestry

Shooting date: 2019-08-06



Shooting date: 2016-05-14



Year of planting forest crops

2016

2017

Quarter network of the forestry

Shooting date: 2019-08-06



Shooting date: 2016-05-14



Year of planting forest crops

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2017

Quarter network of the forestry

Shooting date: 2019-08-06



0 100 M

Shooting date: 2016-05-14



Year of planting forest crops

2016

2017

Quarter network of the forestry

Shooting date: 2019-08-06



0 100 M

Shooting date: 2016-05-14



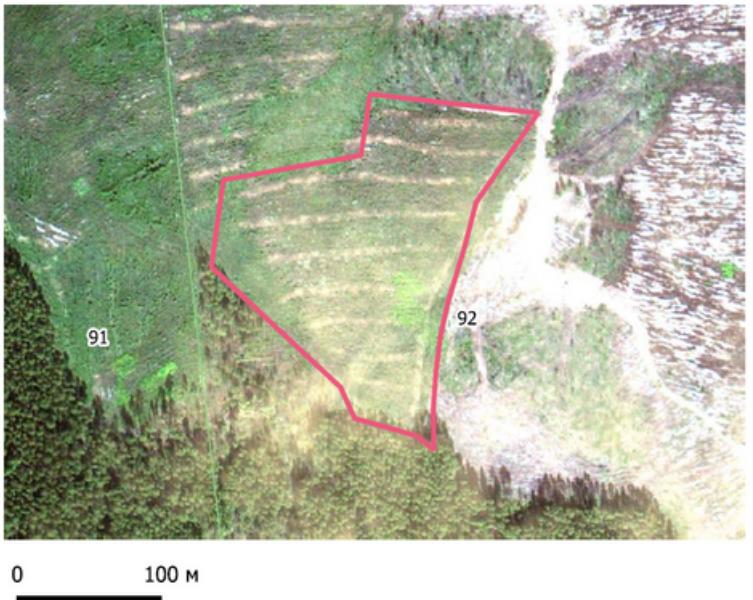
Year of planting forest crops

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2017

Quarter network of the forestry

Shooting date: 2019-08-06



0 100 M

Shooting date: 2016-05-14



Year of planting forest crops

2016

2017

Quarter network of the forestry

Shooting date: 2019-08-06



0 100 M

Shooting date: 2016-05-14



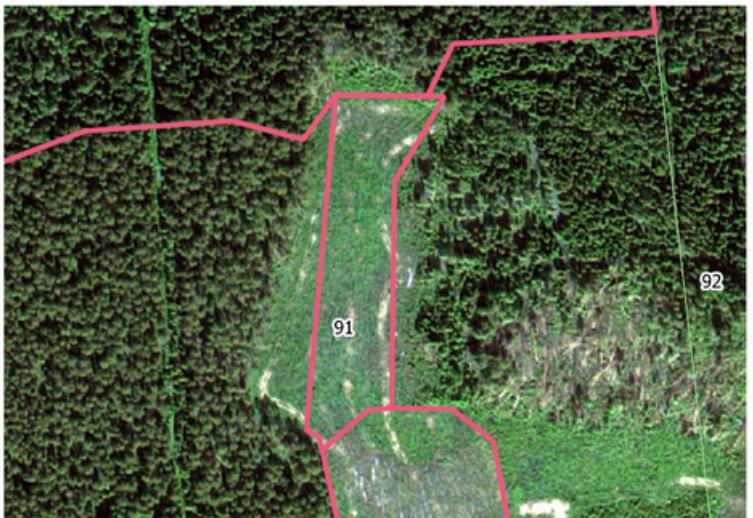
Year of planting forest crops

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Shooting date: 2019-08-06



0 100 M

Shooting date: 2016-05-14



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0 100 M

Shooting date: 2016-05-14



Year of planting forest crops



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2017



Quarter network of the forestry

Shooting date: 2019-08-06



0

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Shooting date: 2016-05-14



Year of planting forest crops



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2017



Quarter network of the forestry

Shooting date: 2019-08-06



0

100 M

Shooting date: 2016-05-14



Year of planting forest crops

2016

2017

Quarter network of the forestry

Shooting date: 2019-08-06



Shooting date: 2016-05-14



Year of planting forest crops

2016

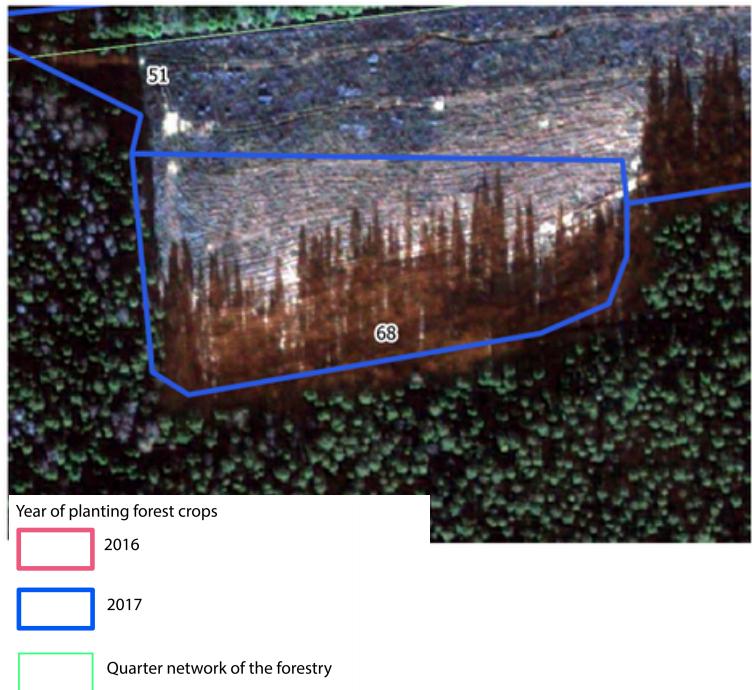
2017

Quarter network of the forestry

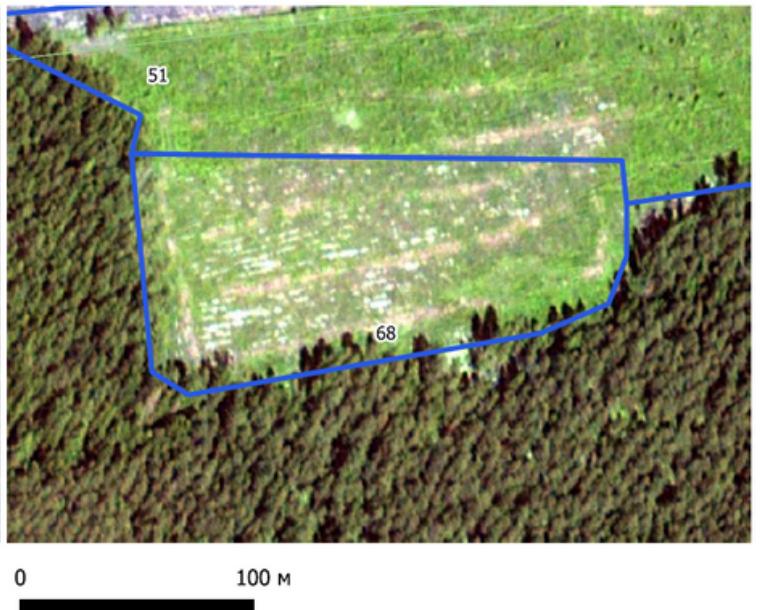
Shooting date: 2019-08-06



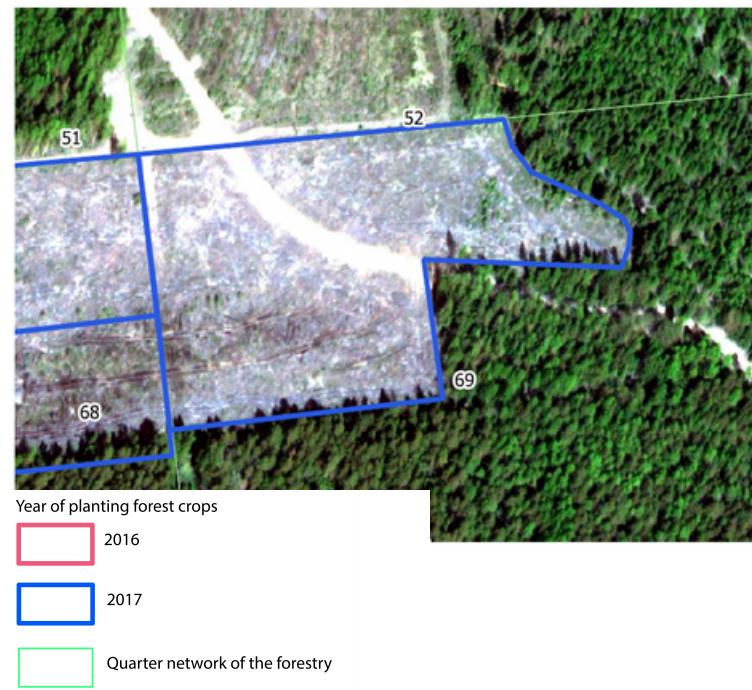
Shooting date: 2017-10-17



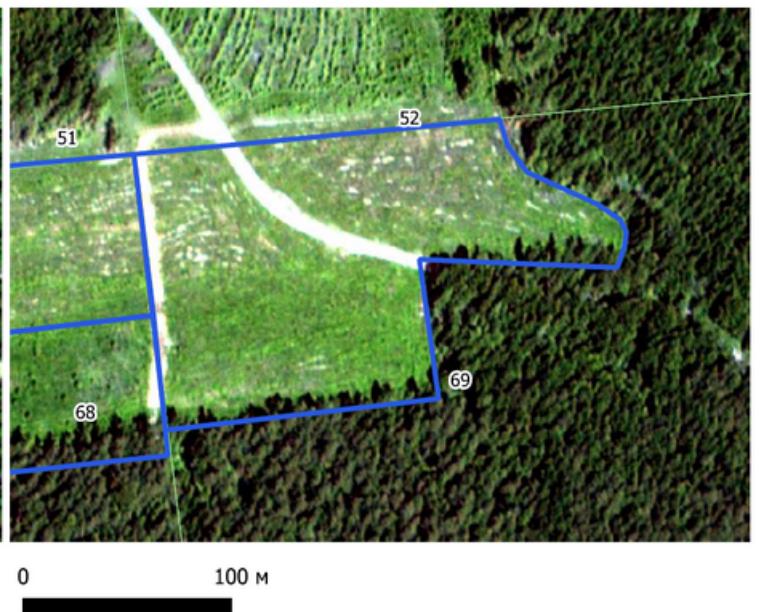
Shooting date: 2019-06-10



Shooting date: 2016-05-14



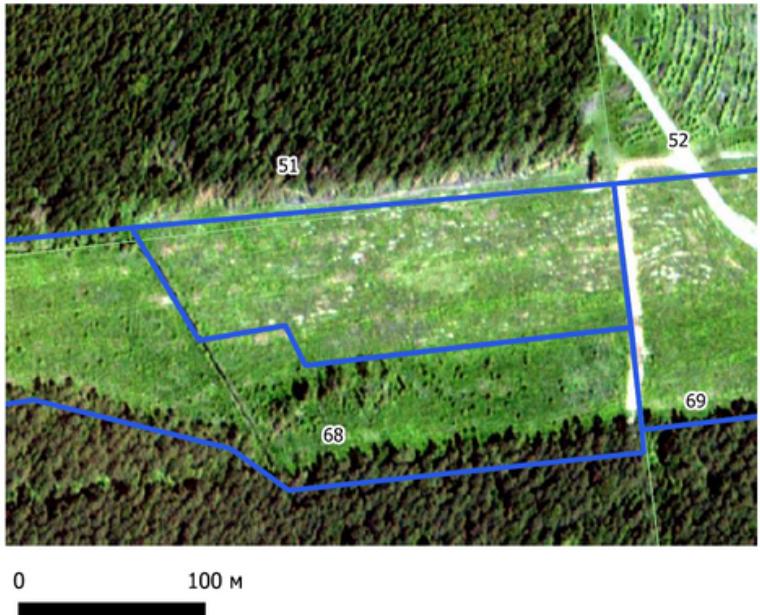
Shooting date: 2019-06-10



Shooting date: 2016-05-14



Shooting date: 2019-06-10



Shooting date: 2016-05-14, 2017-10-17



Shooting date: 2019-06-10



Year of planting forest crops

2016

2017

Quarter network of the forestry