

Result of Sample Tree Enumeration of Junnar Forest Division

Junnar forest division is one of the forest divisions of Pune circle.

Forest Area:- In view of Management and legal Status-wise, the details of forest area of Junnar Forest Division as on dated 31/03/2018 as per Annual Administration Report, are as follows.

Table No-1
Classification of Forest area according to Management & Legal status
(Area in Sq. km.)

Sr. No.	Controlling Agency	Reserved forest	Protected forest	Un-classed forest	Total Forest
1.	Area in charge of Forest Department	580.97	0	1.39	582.36
2.	Area in charge of F.D.C.M.	0	0	0	0
3.	Private Forest brought under possession of Forest Department	22.76	0	0	22.76
Total		603.73	0	1.39	605.12
% to total forest area		99.77	0	0.23	100

Junnar Forest Division consist of 7 Ranges. The Range-wise Forest area under Scientific Management as prescribed in Working Plan by Dy. C.F. Junnar Forest Division is as under.

Table No.2

Sr. No	Names of Ranges	Total Forest area in (ha)
1.	Junnar	9190.00
2.	Otur	11448.86
3.	Manchar	7724.12
4.	Ghodegaon	9742.66
5	Khed	8041.72
6	Shirur	4250.51
7	Chakan	8187.93
	Total	58585.80

Now Conservator of Forest, Working Plan, Pune has proposed following working circle wise forest area, for sample tree enumeration in proposed new Working Plan.

Table No.3
Working Circle wise Area proposed for tree enumeration

Sr. No.	Name of working circle	Population area in ha
1	Afforestation W. C.	25293.49
2	Protection W.C.	28507.19
3	Kuran W.C.	4289.61
	Total	58090.29

Sampling plan of Tree Enumeration

Actually the tree enumeration work was done by the territorial staff of Dy. Conservator of Forest Junnar Division during May-2018 to Jan-2019. The entire forest division's area was considered for sampling enumeration. The trees are enumerated in girth classes started from 15-30 cms to Above 150 cms. The girth is measured at breast height (g.b.h.).

The statistical sampling method namely "Systematic Line Plot Sampling with Random Start" was used for tree enumeration. The plot size is of 25"x25" (25 seconds x 25 seconds) i.e. 56.25 ha. In each plot of size 56.25 ha., 0.1 ha. plot was enumerated. The complete enumeration of trees, Natural regeneration, Grass and Medicinal plant species were carried out for enumeration in these plots. Similarly qualitative measurements were also carried out. Whole methodology has been adopted as per prescription contained in National Working Plan Code 2014.

On scrutiny of data and preparation of results i.e. (1) Stock per hectare was calculated and the result are being reported in the form of following statements.

Statement I : Estimated growing stock- No. of Sound trees in population area.

Statement II : Estimated growing stock- No. of Sound trees per ha.

Statement III : Percentage distribution of total stock of species over all girth classes.

Statement IV : Percentage of stock of species in a girth class to the total stock in that particular girth class.

Statement V : Estimated growing stock - volume in cum./ha.

Some noteworthy result on current enumeration is described in following Table No. 4(a)

Table No. 4 (a)
Statement showing estimated No. of trees per ha. in Previous and Current
(May-2018 to Jan-2019) tree enumeration

Sr. No	Name of Working Circle	Past enumeration	Sr. No.	Name of Working Circle	Current enumeration (May-2018 to Jan-2019) No. of trees per ha.
		No past Enumeration	1	Afforestation W. C.	194.42
			2	Protection W.C.	308.98
			3	Kuran W.C.	212.94
			Weighted Average		252.09

Table 4 (b)**Estimated percentage distribution of trees in 15U30 ,31 U 45 and remaining girth class to overall girth class**

Sr.No.	Working Circle	Girth class-wise estimated percentage of number of trees			
		15 U 30	31U45	Remaining Girth Classes	Total estimated No. of trees
1	Afforestation W. C.	47.23	23.20	29.57	100
2	Protection W.C.	29.48	25.40	45.12	100
3	Kuran W.C.	47.79	19.34	32.87	100
Weighted Average		38.56	24.00	37.44	100

Working circle wise estimated, number of sound trees per hectare are as follows.

Table No.5**Working Circlewise No. of sound trees per ha**

Sr. No.	Name of Working Circle	Total	General utility species	Special utility species	Minor forest produce species	Other species
1	2	3	4	5	6	7
1	Afforestation W.C	194.42	10.99	17.56	33.51	132.42
	% of stock to total stock	100	5.65	9.03	17.24	68.08
2	Protection W.C.	308.98	56.89	17.32	80.68	154.10
	% of stock to total stock	100	18.41	5.61	26.11	49.87
3	Kuran W.C.	212.94	22.35	65.88	82.35	212.94
	% of stock to total stock	100	10.50	19.89	30.94	38.68
Total weighted average		252.09	34.36	19.23	59.05	139.34
% of stock to total stock		100	13.63	7.63	23.43	55.29

Table No.5A**Working Circlewise Volume in cum. per ha**

Sr. No.	Name of Working Circle	Total	General utility species	Special utility species	Minor forest produce species	Other species
1	2	3	4	5	6	7
1	Afforestation W. C.	31.09	1.51	3.11	3.93	22.54
	% of stock to total stock	100	4.85	10.00	12.64	72.51

2	Protection W.C.	69.99	12.69	2.34	20.08	34.87
	% of stock to total stock	100	18.13	3.35	28.70	49.82
3	Kuran W.C.	38.06	4.55	7.84	12.48	13.19
	% of stock to total stock	100	11.96	20.59	32.80	34.66
Total weighted average		7.22	3.08	12.49	27.90	50.69
% of stock to total stock		100	14.24	6.08	24.64	55.04

Highlights from the results of tree enumeration as given in table No.5, are summarised below:

1) Afforestation Working Circle:-

Category wise percentage of Species to total growing stock in this working circle is as given below

Sr. No.	Category of Species	Name of Species	% to total growing stock
1	A:-Species of General Utility	Ain, Shisam, Teak	5.65
2	B:-Species of Special Utility	Dhawada, Hiwar, Khair, Sawar, Shivan, Kalamb	9.03
3	C:-Species of Minor Forest Produce	Apta, Awala, Bor, Chandan, Chinch, Neem, Nilgiri, Shiras, Sitafal, Tendu.	17.24
4	D:-Other Species	Anjan,Babhul,Dhaman,Glyricidia,Kanchan,Karanj,Kashid,Mogir,Movai,Pangara,Prosopis,Shisoo,Subabhul,Wawla,Yeltur,Other.etc	68.08

2) Protection Working Circle:-

Category wise percentage of Species to total growing stock in this working circle is as given below

Sr. No.	Category of Species	Name of Species	% to total growing stock
1	A:- Species of General Utility	Ain, Bibla, Bondara, Kakad, Teak, Shisam	18.41
2	B:-Species of Special Utility	Dhawada, Haldu, Hiwar, Kadai, Khair, Sawar, Shivan.	5.61
3	C:-Species of Minor Forest Produce.	Amba, Apta, Awala, Behada, Bor, Chandan, Chinch, Hirda, Jambhul, Moha, Neem, Nilgiri, Palas, Sitafal, Tendu	26.11
4	D:-Other Species	Adhal, Acacia, Anjan, Asana, Ashind, Babhul, Bahava, Dhaman, Dhoban, Glyricidia, Kanchan, Karavand, Kuri, Lalai, Lokhandi, Mondal, Pangara, Shisoo, Subhabul, Umbar, Varas, Wavala, other etc	49.87

3) Kuran Working Circle:-

Category wise percentage of Species to total growing stock in this working circle is as given below

Sr. No	Category of Species	Name of Species	% to total growing stock
1	A:-Species of General Utility	Ain, Teak	10.50
2	B:-Species of Special Utility	Hiwar, Khair, Sawar	19.89
3	C:-Species of Minor Forest Produce	Apta, Bor, Chandan, Chinch, Neem, Nilgiri, Shiras.	30.94
4	D:-Other Species	Babhul, Ghatbor, Glyricidia, Sayar, Sisoo, Subabhul Mogir etc.	38.68

Table No.6

Availability of Teak in Previous Enumeration (No. of sound trees per ha.)

Sr. No	Name Working Circle	Total growing Stock	Teak/Ha	% of stock of trees to the total stock
1	2	3	4	5
	No previous enumeration	--	--	--
	Weighted Average	---	--	--

Table No.6 (A)

**Availability of Teak in Current (May-2018 to Jan-2019) enumeration.
(No. of sound trees per ha.)**

Sr. No	Name Working Circle	Total growing Stock	Teak/Ha	% of stock of Teak trees to the total stock
1	2	3	4	5
1	Afforestation Working Circle	194.42	7.71	3.97
2	Protection W.C.	308.98	32.74	10.60
3	Kuran W.C.	212.94	15.29	7.18
Total (Weighted Average)		252.09	20.56	8.16

Statistical Analysis: -

The Statistical personnel of the office of the Chief Forest Statistician, Maharashtra State, Nagpur has carried out the statistical analysis of the data. The percentage standard error is calculated for each Working Circle is given in the following table No. 7

Table No.7
Working circlewise standard error

Sr. No.	Name of working circle	Population area in ha	Sample area in ha	Intensity of sampling %	% Standard Error
1	Afforestation W.C.	25293.491	13.10	0.05	3.95
2	Protection W.C.	28507.190	16.40	0.06	4.73
3	Kuran W.C.	4289.610	1.70	0.04	13.93
	Total	58090.291	31.20	0.05	--

(S. J. Karale)
Chief Forest Statistician,
Maharashtra State, Nagpur.