Forest Service

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California BioRAM & BioMAT Facilities
Suitable National Forest System (NFS) Lands

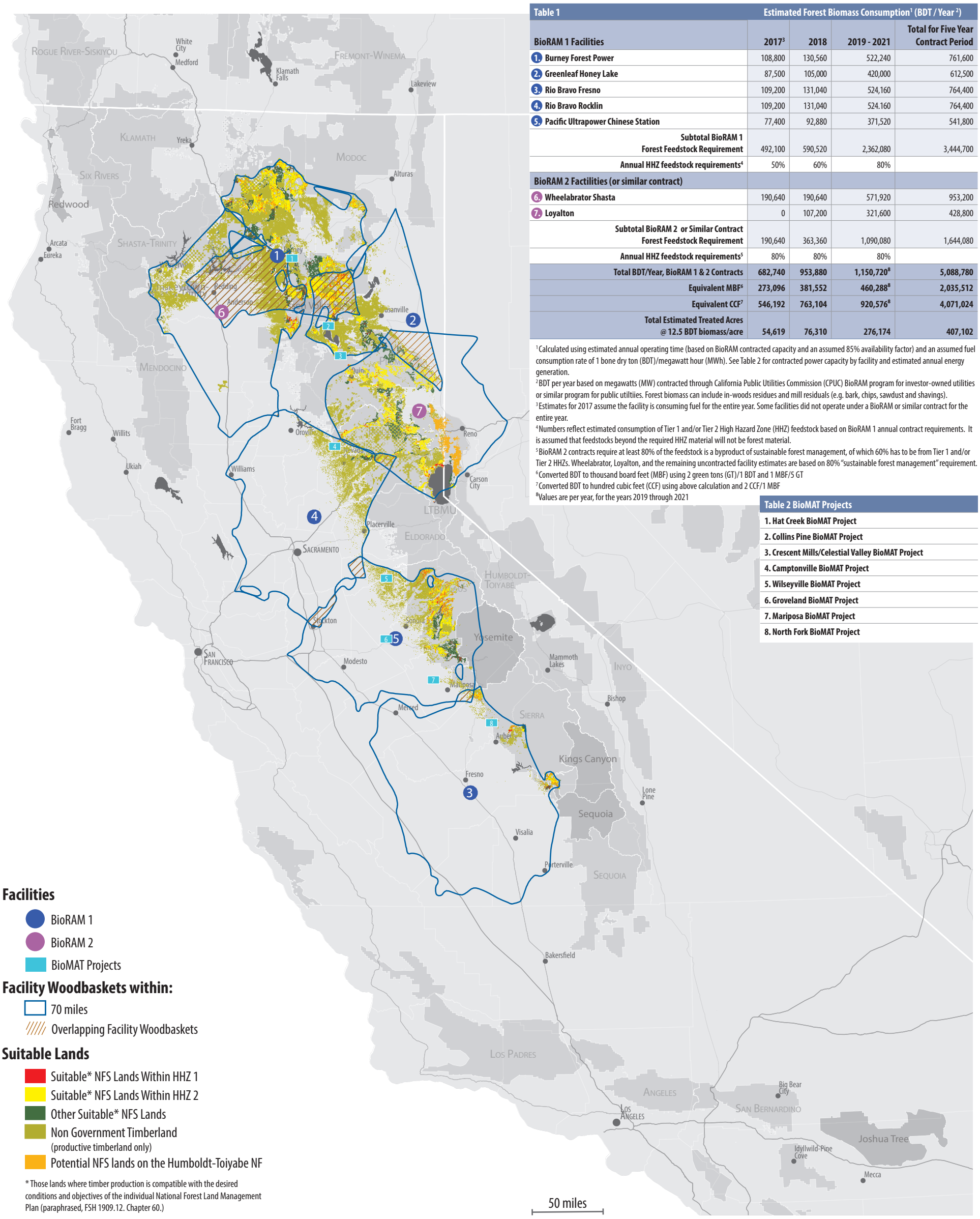

Table 1	Estimated Forest Biomass Consumption[1] (BDT / Year[2])			
BioRAM 1 Facilities	**2017[3]**	**2018**	**2019 - 2021**	**Total for Five Year Contract Period**
1. Burney Forest Power	108,800	130,560	522,240	761,600
2. Greenleaf Honey Lake	87,500	105,000	420,000	612,500
3. Rio Bravo Fresno	109,200	131,040	524,160	764,400
4. Rio Bravo Rocklin	109,200	131,040	524.160	764,400
5. Pacific Ultrapower Chinese Station	77,400	92,880	371,520	541,800
Subtotal BioRAM 1 Forest Feedstock Requirement	492,100	590,520	2,362,080	3,444,700
Annual HHZ feedstock requirements[4]	50%	60%	80%	
BioRAM 2 Factilities (or similar contract)				
6. Wheelabrator Shasta	190,640	190,640	571,920	953,200
7. Loyalton	0	107,200	321,600	428,800
Subtotal BioRAM 2 or Similar Contract Forest Feedstock Requirement	190,640	363,360	1,090,080	1,644,080
Annual HHZ feedstock requirements[5]	80%	80%	80%	
Total BDT/Year, BioRAM 1 & 2 Contracts	**682,740**	**953,880**	**1,150,720[8]**	**5,088,780**
Equivalent MBF[6]	**273,096**	**381,552**	**460,288[8]**	**2,035,512**
Equivalent CCF[7]	**546,192**	**763,104**	**920,576[8]**	**4,071,024**
Total Estimated Treated Acres @ 12.5 BDT biomass/acre	**54,619**	**76,310**	**276,174**	**407,102**

[1] Calculated using estimated annual operating time (based on BioRAM contracted capacity and an assumed 85% availability factor) and an assumed fuel consumption rate of 1 bone dry ton (BDT)/megawatt hour (MWh). See Table 2 for contracted power capacity by facility and estimated annual energy generation.
[2] BDT per year based on megawatts (MW) contracted through California Public Utilities Commission (CPUC) BioRAM program for investor-owned utilities or similar program for public utiltiies. Forest biomass can include in-woods residues and mill residuals (e.g. bark, chips, sawdust and shavings).
[3] Estimates for 2017 assume the facility is consuming fuel for the entire year. Some facilities did not operate under a BioRAM or similar contract for the entire year.
[4] Numbers reflect estimated consumption of Tier 1 and/or Tier 2 High Hazard Zone (HHZ) feedstock based on BioRAM 1 annual contract requirements. It is assumed that feedstocks beyond the required HHZ material will not be forest material.
[5] BioRAM 2 contracts require at least 80% of the feedstock is a byproduct of sustainable forest management, of which 60% has to be from Tier 1 and/or Tier 2 HHZs. Wheelabrator, Loyalton, and the remaining uncontracted facility estimates are based on 80% "sustainable forest management" requirement.
[6] Converted BDT to thousand board feet (MBF) using 2 green tons (GT)/1 BDT and 1 MBF/5 GT
[7] Converted BDT to hundred cubic feet (CCF) using above calculation and 2 CCF/1 MBF
[8] Values are per year, for the years 2019 through 2021

Table 2 BioMAT Projects
1. Hat Creek BioMAT Project
2. Collins Pine BioMAT Project
3. Crescent Mills/Celestial Valley BioMAT Project
4. Camptonville BioMAT Project
5. Wilseyville BioMAT Project
6. Groveland BioMAT Project
7. Mariposa BioMAT Project
8. North Fork BioMAT Project

Facilities
- BioRAM 1
- BioRAM 2
- BioMAT Projects

Facility Woodbaskets within:
- 70 miles
- Overlapping Facility Woodbaskets

Suitable Lands
- Suitable* NFS Lands Within HHZ 1
- Suitable* NFS Lands Within HHZ 2
- Other Suitable* NFS Lands
- Non Government Timberland (productive timberland only)
- Potential NFS lands on the Humboldt-Toiyabe NF

* Those lands where timber production is compatible with the desired conditions and objectives of the individual National Forest Land Management Plan (paraphrased, FSH 1909.12. Chapter 60.)

This project is a collaboration between **USDA Forest Service Region 5 State and Private Forestry Program** and **UC Berkeley Woody Biomass Utilization Group**.
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