Supplemental Table 1: Genes involved in the carbon (top) and nitrogen (bottom) cycle that were significantly enhanced under high nitrate conditions. For each pathway the genes are ordered as they are ordred from top to bottom in Fig. 6C and Fig 6D, respectively. Data modified from Bulseco et al. 2020. Full data set are available from the Sequence Read Archive under accession number PRJNA505917.

C Cycle Pathway	**gene**
Central_carbohydrate_metabolism	Mesaconyl_CoA_hydratase
Central_carbohydrate_metabolism	Malate_quinone_oxidoreductase_EC_1_1_99_16
Central_carbohydrate_metabolism	D_alanine_aminotransferase_EC_2_6_1_21
Central_carbohydrate_metabolism	L_malyl_CoA_beta_methylmalyl_CoA_lyase_EC_4_1_3_
Central_carbohydrate_metabolism	Acetyl_CoA_synthetase_ADP_forming_alpha_chain_EC_6_2_1_13
Central_carbohydrate_metabolism	Malate_Na+_symporter
Central_carbohydrate_metabolism	Alanine_racemase_biosynthetic_EC_5_1_1_1
Central_carbohydrate_metabolism	Pyruvate_ferredoxin_oxidoreductase_delta_subunit_EC_1_2_7_1
Central_carbohydrate_metabolism	Malate_synthase_G_EC_2_3_3_9
Central_carbohydrate_metabolism	NADPH_dependent_glyceraldehyde_3_phosphate_dehydrogenase_EC_1_2_1_13
Central_carbohydrate_metabolism	Glycolate_dehydrogenase_EC_1_1_99_14_iron_sulfur_subunit_GlcF
Central_carbohydrate_metabolism	Aconitate_hydratase_2_EC_4_2_1_3
CO2_fixation	Glycolate_dehydrogenase_EC_1_1_99_14_FAD_binding_subunit_GlcE
CO2_fixation	Phosphoglycolate_phosphatase_EC_3_1_3_18
CO2_fixation	Ribulose_bisphosphate_carboxylase_large_chain_EC_4_1_1_39
CO2_fixation	Ribulose_bisphosphate_carboxylase_EC_4_1_1_39
CO2_fixation	RuBisCO_operon_transcriptional_regulator_CbbR
CO2_fixation	carboxysome_shell_protein_CsoS2
CO2_fixation	Rubisco_activation_protein_CbbQ
CO2_fixation	Phosphoribulokinase_EC_2_7_1_19
CO2_fixation	Rubisco_activation_protein_CbbO
Di_and_oligosaccharides	Trehalose_6_phosphate_phosphorylase_EC_2_4_1_216
Di_and_oligosaccharides	Predicted_beta_glucoside_specific_TonB_dependent_outer_membrane_receptor
Di_and_oligosaccharides	Predicted_maltose_specific_TonB_dependent_receptor
Di_and_oligosaccharides	Transcriptional_activator_of_maltose_regulon_MalT
Monosaccharides	Endoglucanase_EC_3_2_1_4
Monosaccharides	Thymidine_phosphorylase_EC_2_4_2_4
Glycoside_hydrolases	Polysaccharide_deacetylase
Organic_acids	2_methylcitrate_dehydratase_FeS_dependent_EC_4_2_1_79
Organic_acids	Propionate_catabolism_operon_transcriptional_regulator_of_GntR_family_predicted]
Organic_acids	Propionyl_CoA_carboxylase_biotin_containing_subunit_EC_6_4_1_3
One_carbon_Metabolism	pyrrolysine_containing
unknown	Hypothetical_protein_VC0266_sugar_utilization_related?
unknown	Predicted_inososе_dehydrogenase

N Cycle Pathway	gene
Denitrification	Nitrous_oxide_reductase_maturation_transmembrane_protein_NosY
Denitrification	Nitrous_oxide_reductase_maturation_protein_NosF_ATPase
Denitrification	Nitric_oxide_reductase_subunit_C_EC_1_7_99_7
Denitrification	Nitric_oxide_reductase_activation_protein_NorE
Denitrification	Nitrous_oxide_reductase_maturation_protein_outer_membrane_lipoprotein_NosL
Denitrification	Nitric_oxide_reductase_activation_protein_NorD
Denitrification	Nitric_oxide_reductase_subunit_B_EC_1_7_99_7
Dissimilatory_nitrite_reductase	Heme_d1_biosynthesis_protein_NirH
Dissimilatory_nitrite_reductase	Heme_d1_biosynthesis_protein_NirD
Dissimilatory_nitrite_reductase	Heme_d1_biosynthesis_protein_NirG
Dissimilatory_nitrite_reductase	Cytochrome_c55X_precursor_NirC
Dissimilatory_nitrite_reductase	Heme_d1_biosynthesis_protein_NirJ
Dissimilatory_nitrite_reductase	Nitrite_reductase_associated_c_type_cytochorome_NirN
Nitrate/nitrite_ammonification	Ferredoxin_type_protein_NapG_periplasmic_nitrate_reductase
Nitrate/nitrite_ammonification	Nitrate_nitrite_response_regulator_protein
Nitrate/nitrite_ammonification	Polyferredoxin_NapH_periplasmic_nitrate_reductase
Nitrate/nitrite_ammonification	Nitrite_transporter_from_formate_nitrite_family
Nitrate/nitrite_ammonification	Nitrate_nitrite_sensor_protein_EC_2_7_3_
Nitrate/nitrite_ammonification	NrfC_protein
Nitrate/nitrite_ammonification	NrfD_protein
Nitrate/nitrite_ammonification	Cytochrome_c_type_protein_NapC
Nitrogen_fixation	Nitrogenase_iron_iron_transcriptional_regulator
Nitrogen_fixation	Nitrogenase_molybdenum_iron_reductase_and_maturation_protein_NifH
Nitrogen_fixation	Nitrogenase_FeMo_cofactor_synthesis_FeS_core_scaffold_and_assembly_protein_NifB
Nitrogen_fixation	Nitrogenase_FeMo_cofactor_scaffold_and_assembly_protein_NifN
Nitrogen_fixation	Nitrogenase_molybdenum_iron_alpha_chain_EC_1_18_6_1
Nitrogen_fixation	Nitrogenase_FeMo_cofactor_scaffold_and_assembly_protein_NifE
Nitrogen_fixation	Iron_sulfur_cluster_assembly_scaffold_protein_NifU
Nitrogen_fixation	Nitrogenase_molybdenum_iron_specific_transcriptional_regulator_NifA
Nitrosative_stress	Hcp_transcriptional_regulator_HcpR_Crp_Fnr_family
Nitrosative_stress	Nitric_oxide_dependent_regulator_DnrN_or_NorA
Nitrosative_stress	Ferredoxin_3_fused_to_uncharacterized_domain
Nitrosative_stress	Hydroxylamine_reductase_EC_1_7
Ammonia_assimilation	Nitrogen_regulation_protein_NRII_EC_2_7_3
Ammonia_assimilation	Ammonium_tranasporter_family