



wpkxgtucn" geqng ikecn" tguqpuq" vq" inqdcn" yct okpi." ykvj" vjg" Łtuv" 4" tguqpuq" dg

rtqfwegf"eqplkevkpi"tguwnvu0"kp"cuwvf{"qh"oki tcvkpi"dktfu"kp"y guvgtp"Rgppu{nxcpkc."

**Methods**

urgekgu"\* P  
 Ykpi" ngpivj" kpetgcugf" ukipkŁecpvn{" kp" ;" urgekgu"\**Geothlypis trichas*  
*Mniotilta varia* *Seiurus aurocapilla*  
*Setophaga caerulescens* *Catharus*  
*fuscescens* *Catharus minimus* *Catharus ustu-*  
*latus* *Vireo olivaceus*  
 ukipkŁecpvn{" kp" 5"\**Setophaga discolor* *Empidonax faviventris*  
*Empidonax minimu*

[gct"\*C J [+ "cig"encuugu"\* P  
 " Hqt"cn"urgekgu"eq o dkpgf."hcv/htgg" o cuu"kpetgcugf"3052 ' "Ö"2042 ' "dgvyggp"3 ; :2"  
F P" >" 20223." Vcdng" 3+0" Urgekgu" xctkgf" ukipkŁecpvn{" kp"  
 ejcpig"kp"hcv/htgg" o cuu"qxgt"vk o g"\* P  
 /40:9 ' "vq" -508; ' "dgvyggp" 3 ; :2"cpf"42340"Hcv/htgg" o cuu"kpetgcugf" ukipkŁecpvn{"

*Setophaga virens*

*r n P*

**Spatial variation in body-size changes**

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htq o "3 ; :2/42340"Guvk o cvgu"ctg"eqghŁekgpvu0"Pg i cvkxg"eqghŁekgpvu"kp fkecvg"fgenkpi"uk |g"cpf"rqukvxg"  
 eqghŁekgpvu"kp fkecvg"kpetgcukpi"uk |g0"UG"ku"uvcpcfctf"gttq0

*F P*

---

---

*n*

*P*

Lelegruu="pē i cixxg"eqqihLelegruu"pfilecig" fgeikpki "uk | g"cpf" rqukixg"eqqihLelegruu"pfilecig"ipetgculpi "uk | g"UG"kuuicp fctf"gttqt"0"

*P*

---

eqf <sup>g</sup>	UelgpwLe <sup>pcog</sup>	n
	<i>Polioptila caerulea</i>	
	<i>Catharus fuscescens</i>	
	<i>Catharus minimus</i>	
	<i>Catharus ustulatus</i>	
	<i>Hylocichla ustelina</i>	
	<i>Contopus virens</i>	
	<i>Empidonax faviventris</i>	
	<i>Empidonax minimus</i>	
	<i>Empidonax</i>	
	<i>Empidonax virescens</i>	
Y j <sup>h</sup> v/g/g{gf <sup>h</sup> Xktgq <sup>h</sup>	<i>Vireo griseus</i>	Y GXI <sup>h</sup>
T <sup>h</sup> gf/g{gf <sup>h</sup> Xktgq <sup>h</sup>	<i>Vireo olivaceus</i>	TGX <sup>h</sup>

*r n P r n*

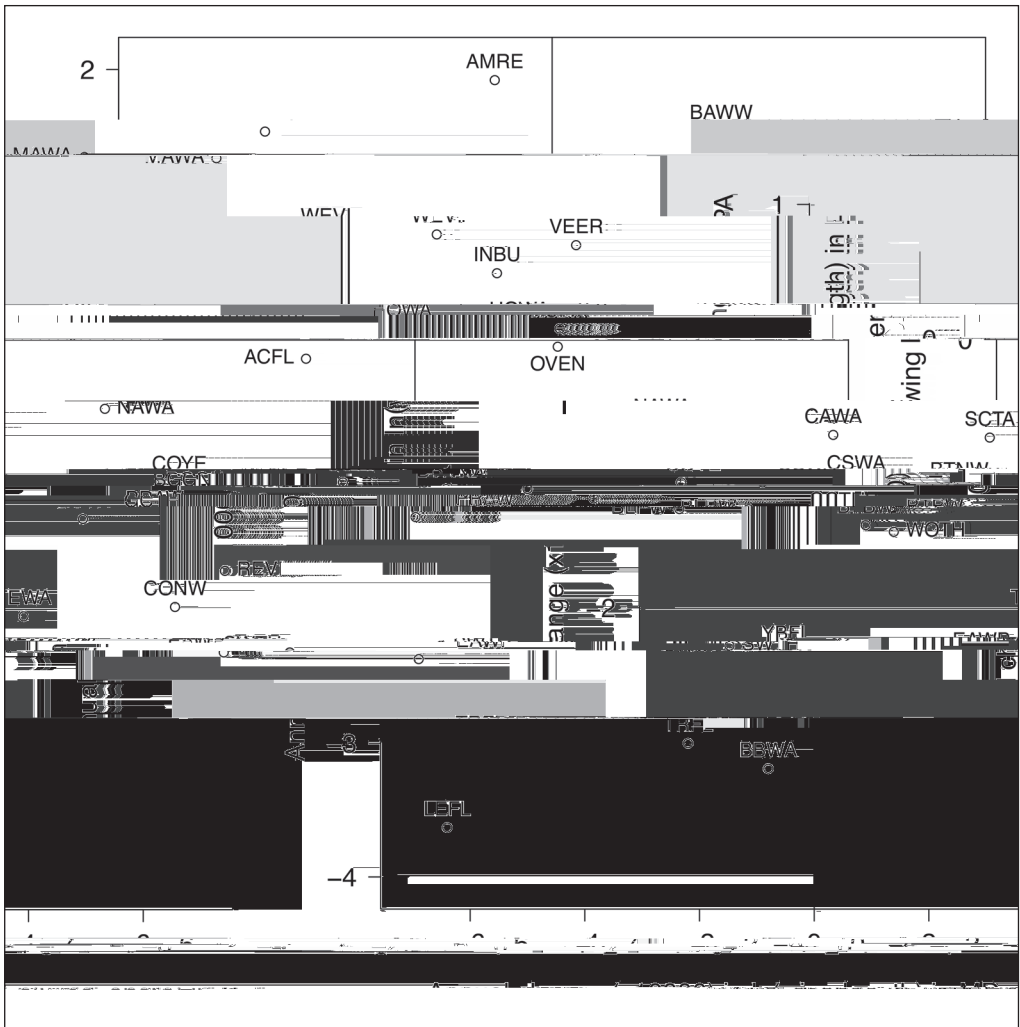
*P*

**Discussion**

urgekŁe"ejcpigu"uqogvko"gu"uyco"rgf"vjg"igpgtcn"vtgpf0"Hqt"gzco"rng."fgurkvg"c"

ukipkŁecpv"fgetgcugu"kp"ykpi"ngpi"vj"."cpf"3"gzjkdkgf"c"ukipkŁecpv"fgenkpg"kp"hcvtg"gg"  
o"cuu0"Ykpi"ngpi"vj"cpf"hcvtg"gg"o"cuu"kp"etgcugf"ukipkŁecpvn{"kp";"cpf"8"urgekgu."tg

uklg"\*Vcdng"4+0"Vyq"qh"vjg"5"urgekgu"ykvj"ukipkŁecpv"fgetgcugu"kp"ykpi"ngpi"vj"ygtg"  
Ī{ecvejgtu"\*V{tcpkfcg+."cpf"vjg"qvjgt"5"urgekgu"qh"Ī{ecvejgt"ujqygf"fgetgcukpi"  
dvw"pqpukipkŁecpv"ejcpigu"kp"ykpi"ngpi"vj0"Kp"vjtwujgu"\*Vwtfkfcg+."ykpi"ngpi"vju"kp"  
etgcugf"ukipkŁecpvn{"kp"5"qh"6"urgekgu."cpf"vjg"hqwtvj"urgekgu"ujqygf"c"rqkvkxg"dvw"  
pqpukipkŁecpv"vtgpf0"Yjgp"gzco"kp"gf"kp"fkxkfwcn{."o"cp{"oki"tcvqt{"urgekgu"fkf"pq"  
gzjkdkv"ukipkŁecpv"ejcpigu"kp"dqf{"uklg"<3;"urgekgu"ujqygf"pq"ukipkŁecpv"ejcpig"



n P  
kp"vjg"hcnn"kp"Rgppu{nxcpk0"Urgekgu"eqfgu"ctg"fgŁpgf"kp"Vcdng"40"



kp"ykp i "ngp i v j . "cp f"46"ur gekgu"uj qy gf"pq"uk i pkŁecpv"ej cpi g"kp"hc v/htgg"o cuu0"Oquv"

kp f k x k f w c n u "h t q o "f k h h g t g p v "d t g g f k p i "r q r w n c v k q p u 0 "k v "k u "r q u u k d n g "v j c v "e j c p i g u "k p "d q f { "  
uk | g "j c x g "q e e w t t g f "c v "Ł p g t "u r c v k c n "u e c n g u . "d w v "v j c v "q r r q u k p i "r c v v g t p u "t g u w n w n

urqpug" vq" c" yct okpi" enk o cvg0" Kp" eqpvtcuv." Iqqf o cp" gv" cn0" \*4234+ " fqew o gpvfg"

\*4234+ " j { rqvjguk | gf" vjcv" kpetgcugu" kp" dqf { "uk | g" tg f gevgf" kpetgcugu" kp" enk o cvke" xctk

hcv/htgg" o cuu" cv" qwt" ukvg" \*Hki0" 3+0" Qpg" urgekgu. "Rtcktkg" Yctdngt. "ujqygf" c" ukipkLecpv" fgetgcug" kp" ykpi" ngpi vj" dwv" c" ukipkLecpv" kpetgcug" kp" hcv/htgg" o cuu0" Qwt" Lpfkpi u"

urgekgu" qxgt" eq o rctcdng" vk o gu" cpf" fwtevkqpu" \*54" { gctu" xu0" 68+0" Kp" dqvj" uvw fkgu."

*Setophaga*

*americana*

kp" ykpi" ngpi vj" kp" yguvgt" Rgppu { nxcpkc" \*Hki0" 4+0" Kp" c f fkvkqp. "8" urgekgu" \*Eq o o qp"  
*Catharus minimus* *Oreothlypis rufica-*  
*pilla* *Catharus ustulatus*



vtckv"ecp"kpłwgpeg"qvjgt" o qtrjqnqi kecn"vtckvu0" Fgetgcugf" o cuu."hqt"gzc o rng." o ki jv"  
cuuqekcvgf" ykvj" cgtqf {pc o keu"\* [q o /Vqx"gv"cn0"4228+0"Ejcpigu"kp"dqf {"uk|g"tgłgev"  
Kh"uq."vjgp"enk o cvg" yqwnf" ftkxg"ejcpigu"kp"dqf {"uk|g"qpñ{" y jgp"enk o cvg"ejcpig"ku"



*Melanerpes carolinus*

Mwtv<sup>2</sup>p."D0"3;8:0"Rngkuvqegpg"Oco o cnu"qh"Gwtqrg0"Cnfkpg"Rwdnkujkpi"Eq0."Ejkeciq."KN0"

Okp."U0/M0."Z0"\jcpj."H0Y0"\ykgtu."cpf" I0E0"Jgigt0"42330"Jwocp"eqvtdwvkqp"vq"oqtg/

vqp."K0R0H0"Qygpu."cpf"R0O0"Dgppgv0"422;0" Inqdcn"dkqigqitcrj{"cpf"geqnqi{"qh"dqf{"

Q|iw."C0."F0\0"Ejknfu."O0M0"Qnk."M0D0"Ct okvcig."F0V0"Dnwouvgkp."N0G0"Qnuqp."U0"Vwnlcrwt

Twdgpuygkp." F0T0." cpf" M0C0" J qduqp0" 42260" Htq o " dkt fu" vq" dwwvt f kgu<" Cpk o cn" o qxg o gpv"

UCU"Kpuvkwwg."Kpe0"42330"Dcug"UCUa ;05"Rtqeg fwtgu" I wkfg0"Ect{."PE0

itggpj qwug" i cugu0"Rctv"K<"Vg o rgtcvwtg0"Lqwtpcn"qh"Enk o cvg"42<7677676890  
Vgrnkvm{."E0."cpf"X0" Oknkgp0"42360"Enk o cvg"yct okpi"cpf"Dgti o cpp0u"twng"vj tqwi j "vk o g<"Ku"

X<sup>2</sup>ix<sup>a</sup>tk." \0."X0"D»mqp{." \0"Dctvc." cpf" I 0"Mqx<sup>a</sup>eu0" 42320" Nkhg" j kuvqt{ " rtgfkevu" cfxcepeg